VEILUX®

The Art of Surveillance

Veilux Rack Mount Sever DVR User's Manual

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Chapter 1

DVR

1. Introduction

1.1. Overview

Your new DVR is a state-of–the-art Digital Video Recording System. This system completely PC based system and can be operated at Windows systems. (Windows XP, Windows 2000, Windows 2003, Windows Vista and Windows 7) It has real time or high speed monitoring features, digital recording and play back features, and remote access features which make it one of the most versatile systems on the market.

1.2. Main Features

- **Simultaneous Recording and Playback**

You can record up to 64 channels of video with time lapse and event based recording modes. The system also can record multiple video channels with simultaneous alarm conditions and motion detections. It also supports audio recording and text insertion for POS or access control functions.

- **Renovated Database**

Our renovated database system can support multiple cameras and remote access efficiently.

- **DB (Database) Recovery**

The system was designed to recover recorded data automatically in the event that an abnormal operation or system shut down (a power loss, for example).

- **Remote Access**

You can connect to multiple sites, and each site can be connected with multiple users at the same time.

- **User-Friendly Operation**

Settings and menus are designed for non-expert users, so anybody can navigate the whole system without spending days learning how to operate it.

- **Multiple Picture Qualities and Resolutions**

Configurations are so flexible. You can set each camera individually for resolution, compression, frame rate and recording events.

- **Multi-Zone Motion Detection**

The systems support whole screen motion detection, or user defined area motion detection, with several detection areas for each camera.

- **Scheduled Video Recording**

Operate with 5 different recording modes, including alarm recording, scheduled recording, motion recording and combinations of each. Each camera and mode can be defined hourly, daily, or weekly.

- **Live View Shutdown**

Shut down the live screen viewing screen to access the Windows Desktop, while all the cameras continue to record.

- **Networking Support**

You can remotely connect to DVR through multiple network configurations, including LAN/WAN/ISDN or PSTN. You can also manually configure the ports of each DVR, which allows you to utilize a single high-speed connection to address multiple DVRs from a remote site. Once connected, navigate and operate all the system functions as if you were at the main system-the interface is the same remotely as it is at the server.

- **Pan/Tilt/Zoom**

Control multiple PTZ camera formats, locally or from a remote location.

- **Watchdog**

In the unlikely event system freezes, the system's watchdog feature will automatically reboot the system.

- **Audio**

Monitor live audio, recording, playback and backup audio on one or multiple cameras.

- **Multi-Board**

If you want to have a 8 cameras inputs DVR system from 4 cameras input system (like VSR-4 & VRS-4Pro), you can get a 8ch DVR system after installation of one more VSR-4 or VSR-4 PRO capture card in the existing 4ch DVR system.
Note: Our DVR software doesn't support VMS-2400 board & VMS-2400 board as multi board.

- **DVR Server - RMS**

You can use both the RMS (Remote Monitoring Software) and DVR Server on the same PC at once.

1.3. Warning

- **CE (Communaut' European)**

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

- **FCC (Federal Communications Commission)**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at its own expense.

2. File System

2.1. Before Starting System

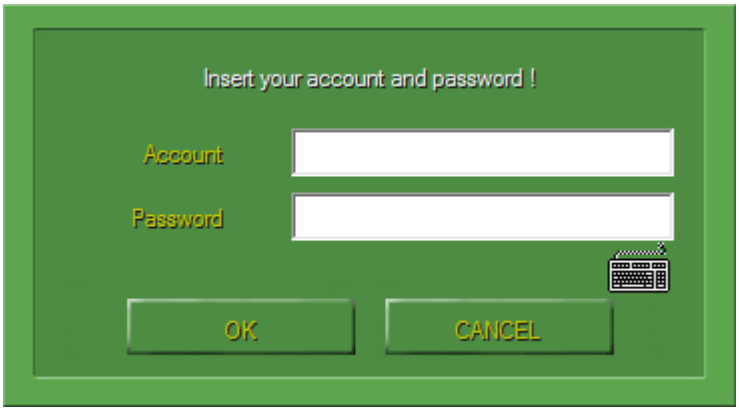
Before starting, the file system must be setup. Only after the file system has been configured can the main system start. If the file system has not configured, please follow the instructions below.

2.2. File System Setup

Start the "File Manager" program by going into Windows: Start➔Programs➔DVR➔Main ➔File Manager

2.2.1. Logon to File System

When you start the file manager (fsutil.exe) program, the program will ask for your "Account" and "Password." The system's Default Account is "1", and the Password is left blank. After entering the account, click "OK" button to start the File Utility System.



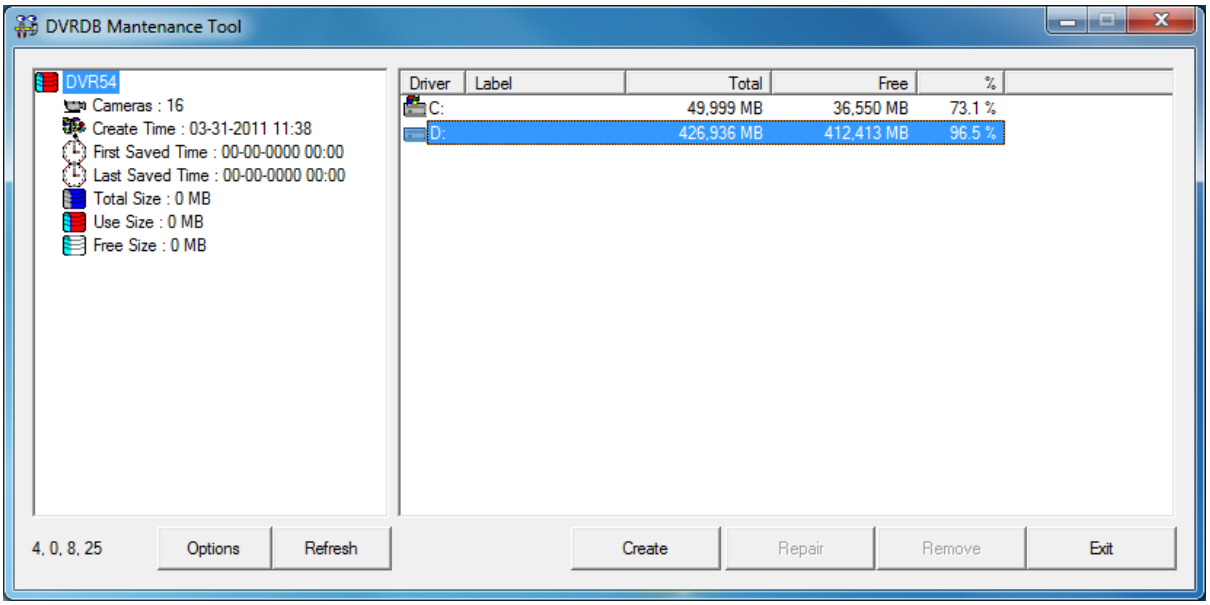
Note: Instead of using the keyboard, you can logon using only with mouse. Simply click the keyboard button (which is right below the password field), and the system will show the keyboard. A keyboard will come up as shown below; simply use click on the keys the same as typing on the keyboard. Either method will work.

ESC F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
` 1 2 3 4 5 6 7 8 9 0 - = BKSP
Tab q w e r t y u i o p [ ] \
Caps a s d f g h j k l ; ' Enter
Shift z x c v b n m , . / Shift
Ctrl Alt Space Alt Ctrl Ins Del

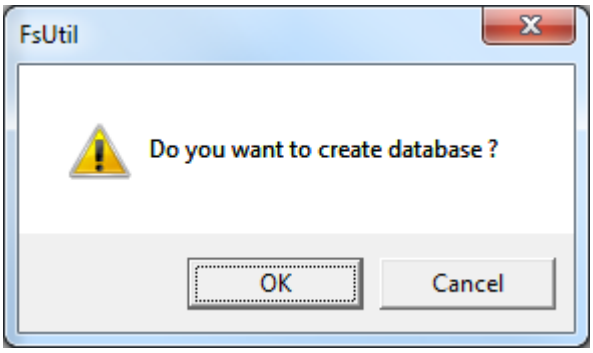
2.2.2. Make Database

After logging in to the file system, the first window screen will appear as follows

- *Create:* Add baskets.

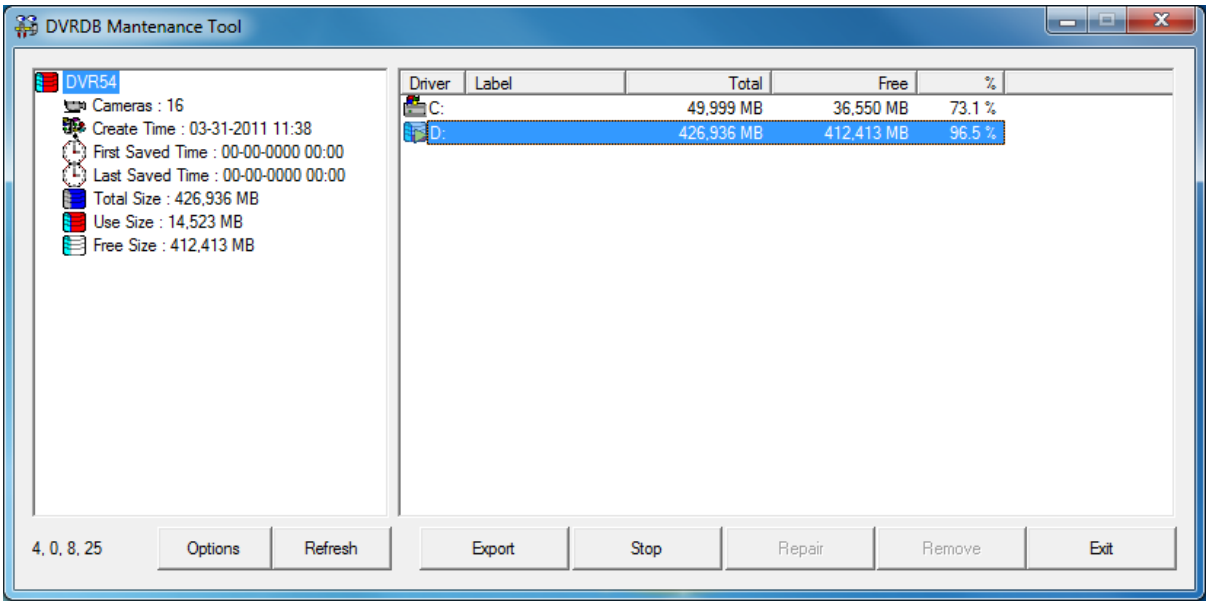


Select hard disk and click Create or Double click the hard disk drive: If you want to use multiple hard drives on the system, configure each drive individually. It is a good idea to leave the operating system partition out of the video database.



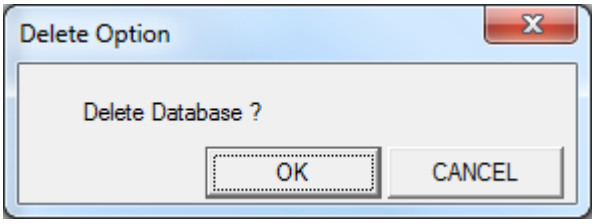
When you select a hard disk drive (double click), the File System Utility will ask for the create database on the drive. Click “OK” button.

When the File System finishes the Database setup, the following screen will appear.



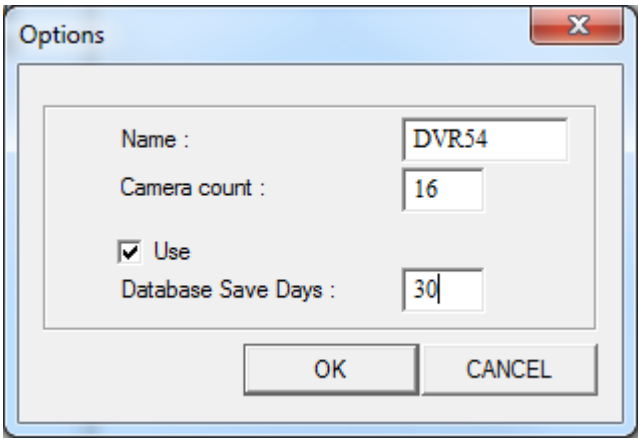
- *Indicate of DB state*:
  - Hard disk which not exist db
  - Empty disk
  - Current use disk
  - Full saved disk
  - Full saved and current use disk
  - Physical error disk. Not writable disk.
  - Logical error disk. Not writable disk.
  - Full disk. Not writable disk.
  - Stopped disk
  - Internal working disk

- *Start:* Be able to save the video data and search the recording data.
- *Stop:* Protect to save the video data but able to search the recording data.
- *Import:* When you use the recording data from other DVR system in your system (See page 67)
- *Export:* When you send the own recording data to other system (See page 67)
- *Remove:* When you delete the data files for exported drive.



If you click “Ok” button, all the data files will be deleted in disks.

- *Options:* Set the database save option.



- *Name:* Enter the name of Database. In most cases, the default name can be used.
- *Camera count:* Specify the maximum number of cameras that will be used for this DVR system.
- *Use:* You can set the "save days" for recording.
- *Database save Days:* If you set to 30 days, the recording data would be keep for 30 days only. "0" would not be effective for the function.

Note: It is okay to have more cameras than you will actually be connecting. If you choose to add cameras later, you will be limited to the number of cameras setup here unless you redo the database.

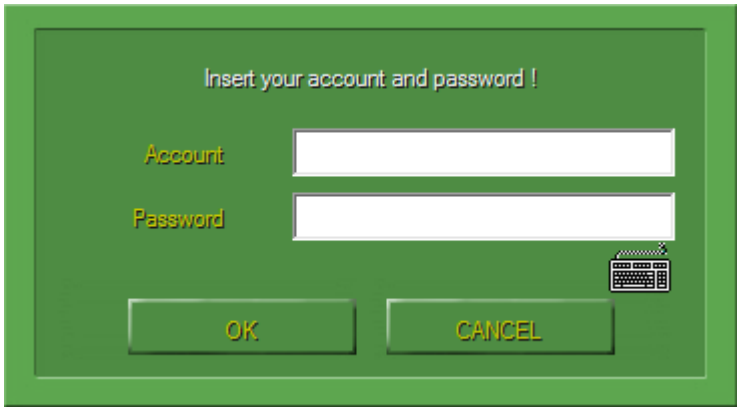
3. DVR Viewer

3.1. Start Application

From the Windows Desktop, double click the DVR Viewer icon, or run the DVRMain.exe program in C:\Program Files\DVR\Main folder

3.1.1. Logon to the DVR Main

When you start the DVRMain (dvrmain.exe) program, the program will ask for your "Account" and "Password." The system's Default Account is "1", and the Password is left blank. After entering the account, click "OK" button to start the DVR Main.



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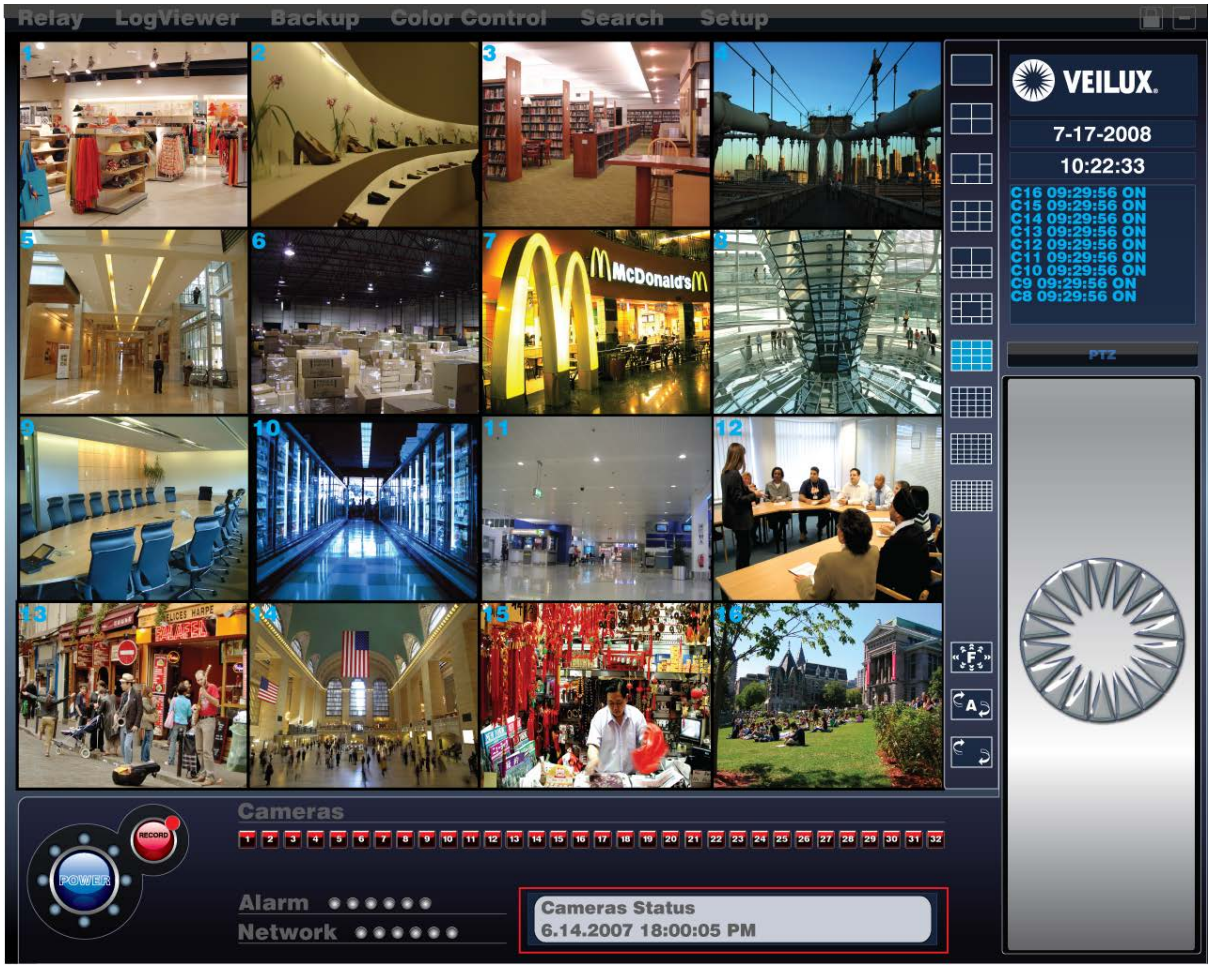
ESC F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
` 1 2 3 4 5 6 7 8 9 0 - = BKSP
Tab q w e r t y u i o p [ ] \
Caps a s d f g h j k l ; ' Enter
Shift z x c v b n m , . / Shift
Ctrl Alt Space Alt Ctrl Ins Del

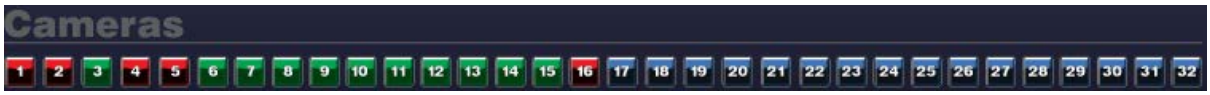
When the DVR program starts, the video screen will be displayed as follows.



3.2. Functions

3.2.1. Camera Indication Boxes

The Camera Indication Boxes are near the bottom of the main screen. You can see the status of each camera that is installed as follows

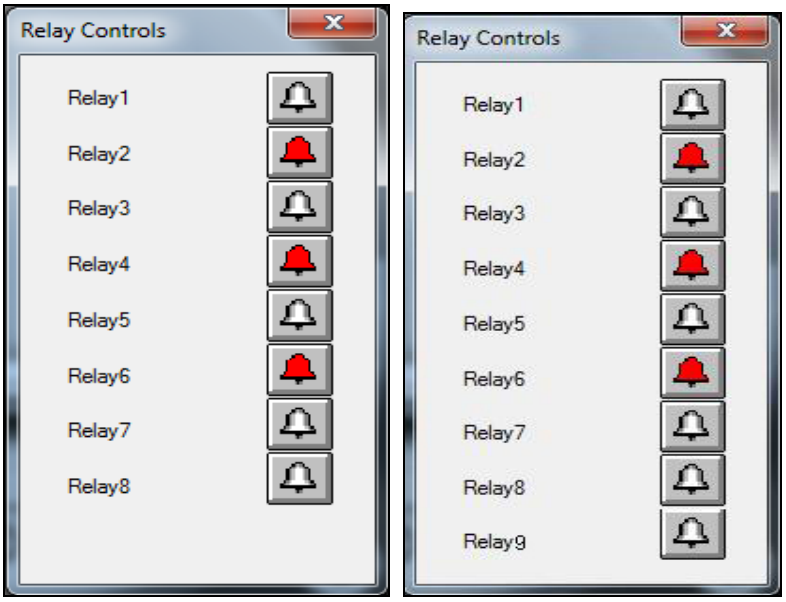


- *The Green box:* Mean the system is viewing the current (real-time) image.
- *The Red box:* Mean that image from the specified camera is recording.
- *The White box:* Mean that no camera installed.

If the system is configured for more than 16 cameras, the camera boxes will be displayed as follows.

3.2.2. Screen Mode Buttons

- Single-Screen-Mode
- 4-Channel Multi-Screen
- 6-Channel Multi-Screen
- 9-Channel Multi-Screen
- 10-Channel Multi-Screen
- 13-Channel Multi-Screen
- 16-Channel Multi-Screen
- 25-Channel Multi-Screen
- 32-Channel Multi-Screen
- 49-Channel Multi-Screen
- 64-Channel Multi-Screen
- Full-Screen Mode
- Next-Screen Mode
- Auto-Rotation Mode



Note: Relay 9 will be shown for hybrid DVR/NVR only and it will be activated when you selected an IP camera only.

: Relay Off : Relay On

- Minimize Screen Mode: Minimize the Window.
- Click here to deactivate any of the DVR controls. A password is required.
- Click here to activate the controls again. A password is required.

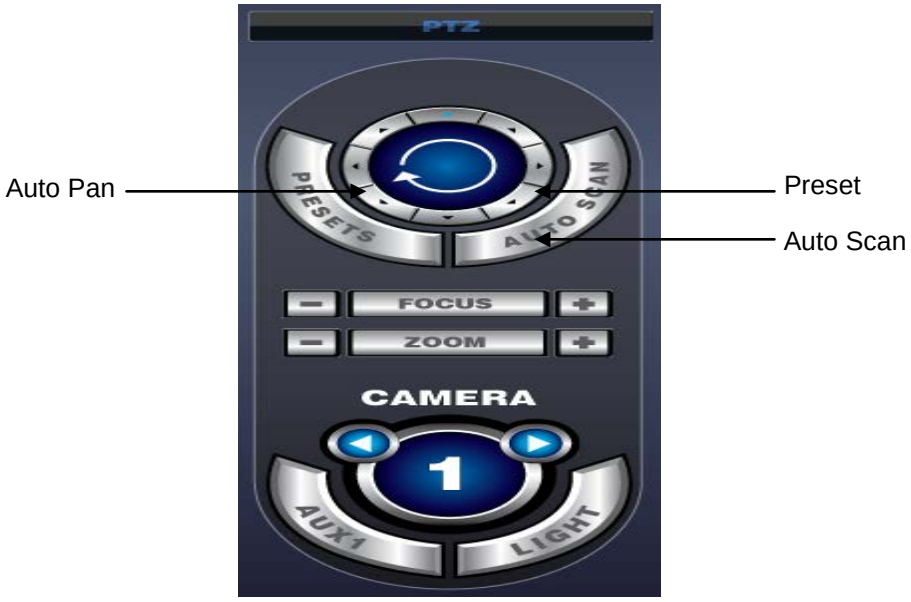
3.2.3. System Status Window

The System Status Window will show the real time status and events occurring

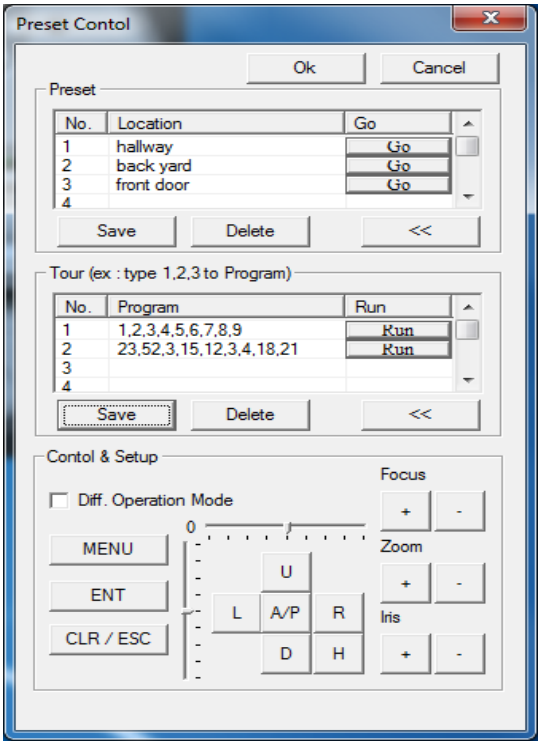
- *Events:* Motion Detected, Sensor, video loss and so on(including camera number and time)
- *ALARM Icon:* If an input signal from the external sensors is occurring, this icon flickers.
- *NETWORK Icon:* This icon flickers if someone is remotely connected to the system. This can be turned off in the system settings.

3.2.4. Pan/Tilt Control Box

If Pan/Tilt camera is installed, you can control the Focus, Zoom, Light, and Camera directions through this control box.



- *Auto Pan:* Based on the auto pan features of whichever PTZ camera is installed.
- *Auto Scan:* Auto scans through the first 9 presets (1→2→3→5→6→7→8→9→1→2→...)
- *Preset:* If you click here, the following dialogue box will appear.



- **Preset**
  - *No.:* Number of the Preset position (1~128).
  - *Location:* Description of the location for the preset position.
  - *Go:* Click the "Go" button, and the camera will move to that preset position.
  - *Save:* To save the current position of the PTZ in that preset location.
  - *Delete:* Deletes the selected preset position.

    First, move the PTZ camera to the desired position and then please select the number of the preset position and enter the location. Click "Save" to set the preset.

- **Tour** (This function only operates on PTZ devices that accommodate the feature)
  - *No.:* Number of the Touring (1~128).
  - *Program:* Specify the order of the presets used in the Tour.
  - *Run:* Click the "Run" button, to initiate the preprogrammed tour. The camera will stay on each location for 5 seconds before moving to the next position.
  - *Save:* Saves the Tour number after you have setup the Tour.
  - *Delete:* Deletes the selected Tour.

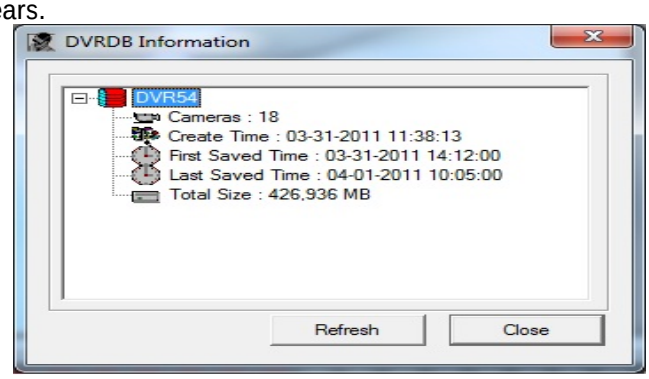
    - **How to setup a Tour:** Click cell you want to setup and type in the preset position numbers in the order you want. (e.g. 23, 52, 3, 15, 12, 3, 4, 18, 21 , 23→52→3→15→12→3→4→18→21…) And click "Save" button.

    - **Initiating the Tour:** Simply click the "Run" button and the PTZ camera will start "touring". Click again to stop.

- **Control & Setup**
  - *Diff. Operation Mode:* Check this box and the U, D, L, R keys will be changed from "click and move" to "cursor move". (In case of CyberScan1, you must click the box to insert 'START(PTZ)' value and 'END(PTZ)' value in the setting of 'AUTO SCAN SETUP'. You also need to click the box when you input title for the position of the Auto scan (Touring). Please refer to the PTZ manual for the details.
  - *MENU:* Calls the settings menu of PTZ camera.
  - *ENT:* Enters values chosen while you are in menu mode.
  - *CLR / ESC:* Cancels options currently chosen in menu mode.
  - *U:* Move up camera. (or, move up cursor.)
  - *D:* Move down camera. (or move down cursor.)
  - *L:* Move left camera. (or , move left cursor.)
  - *R:* Move right camera. (or, move right cursor.)
  - *H:* Goes to home position.
  - *AP:* Start/Stop auto pan.
  - *Focus +/-:* Focus near/far.
  - *Zoom +/-:* Zoom in/out.
  - *Iris +/-:* Iris open/close.
  - *Hor Scrollbar:* Pan speed.
  - *Vert Scrollbar:* Tilt Speed.

3.2.5. DB information

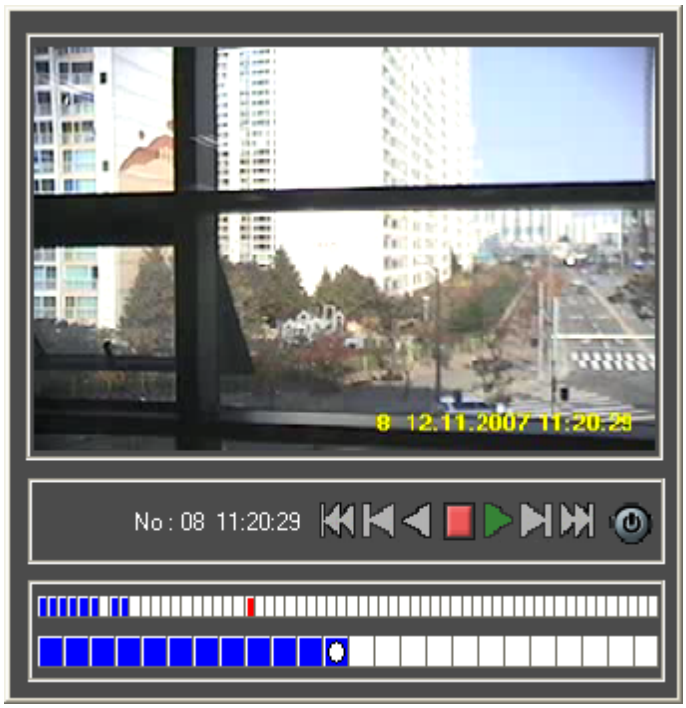
If you click this area, the following screen appears.



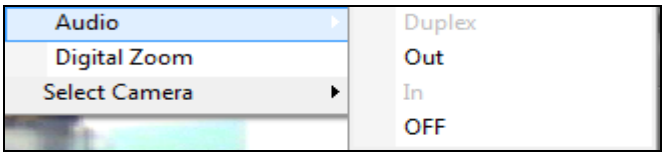
3.2.6. Context Menu Functions

The context menu box shows the usable items by the setting.

- *Stop Capture:* This will stop capturing images on the recorder, but it is saving image on disk.(Live board does not support this function. Other overlay boards return to original status (capture) when a user clicks split mode)
- *Save as Snapshot:* Take a snapshot from the live video of the specified camera into C:\\Programs Files\\DVR\\Main\\SavedImages\\01~64 folder
- *Save as AVI:* This will save an AVI file of current camera into C:\\Programs Files\\DVR\\Main\\ SavedImages \\01~64 folder. It will continue until it is unchecked.
- *Print :* Prints an image of current camera.(If a printer is installed)
- *OneSearch:* Bring up the "One Search" feature installed with the system. You can search and view live at the same time.

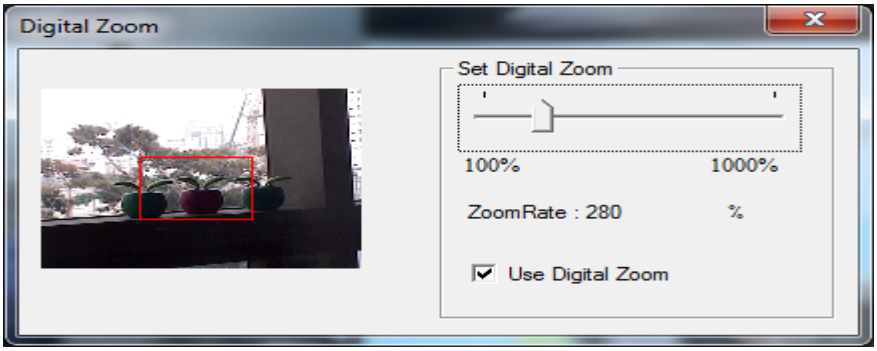


- *Open Pan/Tilt:* You can work rightly pan/tilt that you want to control by right clicking on a specific camera. You can control PTZ on screen using mouse.
- *Audio:* If you set to use audio(except System Audio) at Audio tab, you can listen audio in live mode. And it is possible two-way audio with IPCamera.



- *Image Rendering:* If you use Grandeye IP camera, you can control this function. This function allows fisheye image to be rendered as VCams(Virtual camera) or panorama views.(Refer to 65p.)

- *Digital Zoom:* You can display zoomed image. To Zoom in-out on an area of interest, move slider bar. And if you want to display zoomed image on viewer, check “Use Digital Zoom”, otherwise uncheck this function. (The Digital Zoom is not available when you use VCA option.)



User Mode Monitor

You can control the split mode, rotation, auto switch, pan/tilt function.

3.2.7. Extra Functions

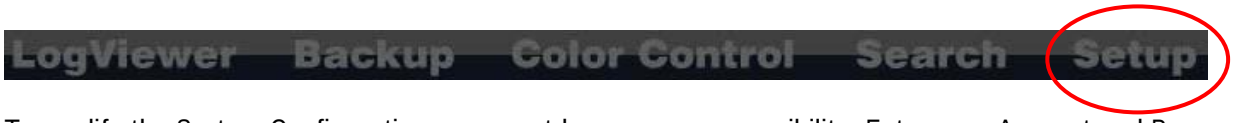
- *Freeform Display on Live Viewer:* You can rearrange the live camera screen by dragging and dropping cameras into whatever position you like. To add cameras outside of the range of the screen (i.e., camera 5 in a four camera view), go to the 16 position screens and drag the camera to the position you want, then return to the smaller camera view.

- In the 32 channel view, Camera 1 is the same as the middle image.

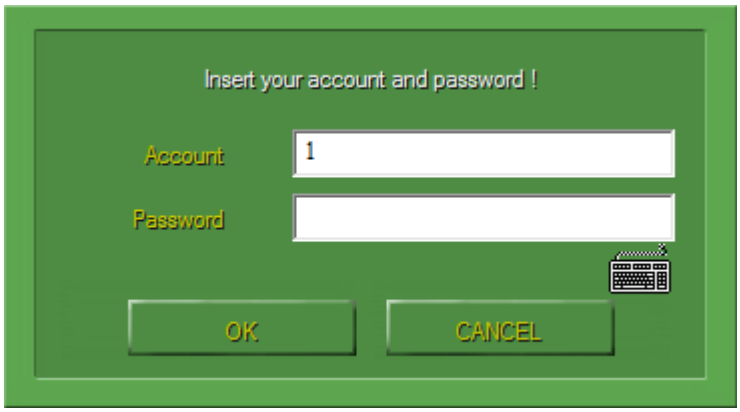
4. System Setup

4.1. Start System Setup

To start the Setting menu, click the Setting button from the Action Buttons at the bottom of the live view screen.



To modify the System Configuration, you must have proper accessibility. Enter your Account and Password. The system has Default Account ID of “1”, and the password is blank. After entering Account ID and password, click “OK” button to start the Setting Menu.

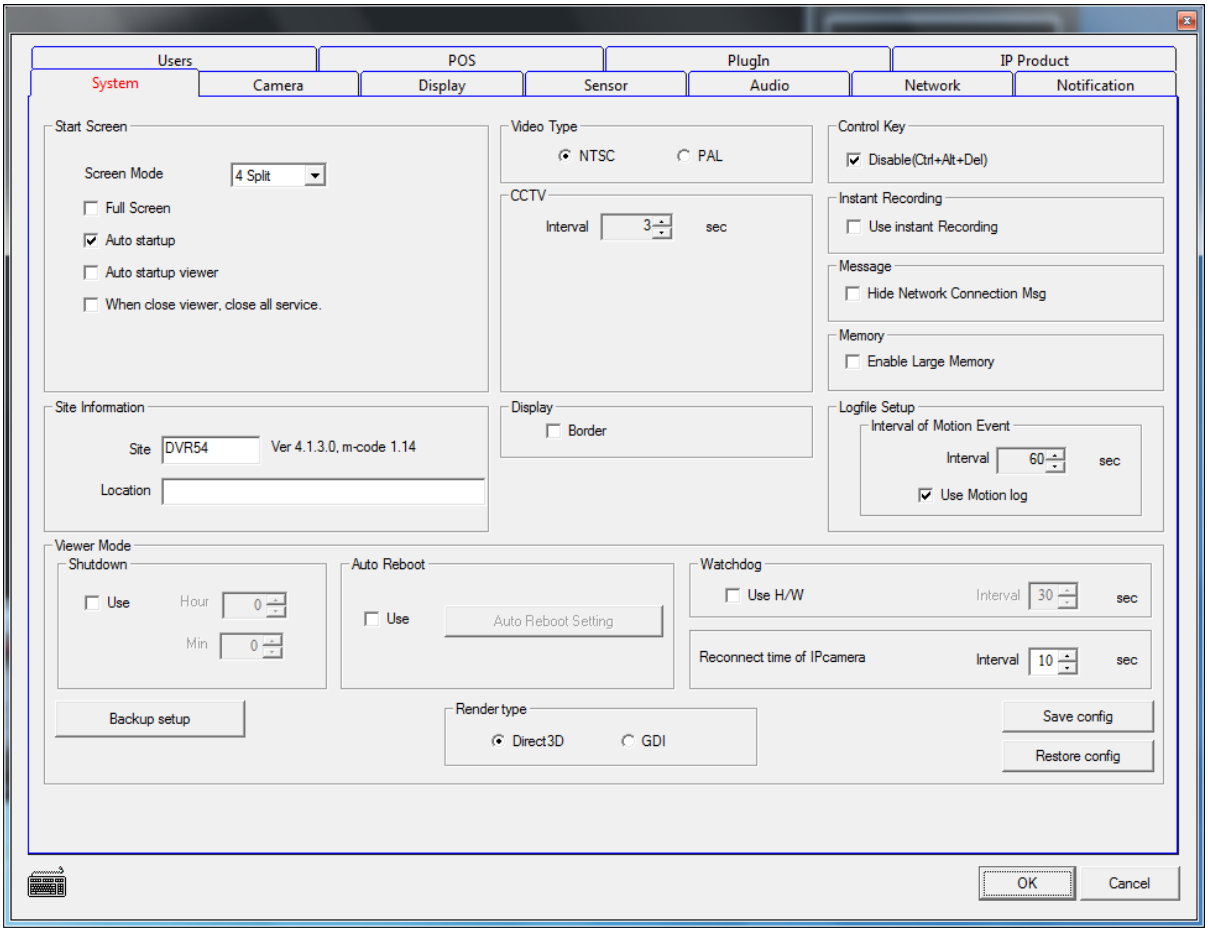


Note: Instead of using the keyboard, you can logon using only with mouse. Simply click the keyboard button (which is right below the password field), and the system will show the keyboard. A keyboard will come up as shown below; simply use click on the keys the same as typing on the keyboard. Either method will work.

ESC F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
` 1 2 3 4 5 6 7 8 9 0 - = BKSP
Tab q w e r t y u i o p [ ] \
Caps a s d f g h j k l ; ' Enter
Shift z x c v b n m , . / Shift
Ctrl Alt Space Alt Ctrl Ins Del

4.2. System Setup

Click “System” tab, and the detailed system setting menu will be displayed.

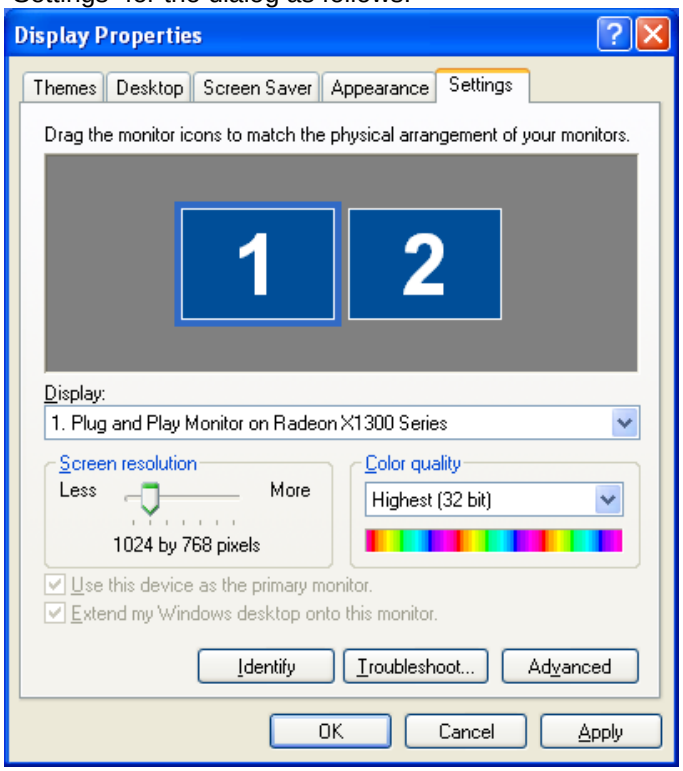


- Start Screen: You can choose the default startup screen from this location

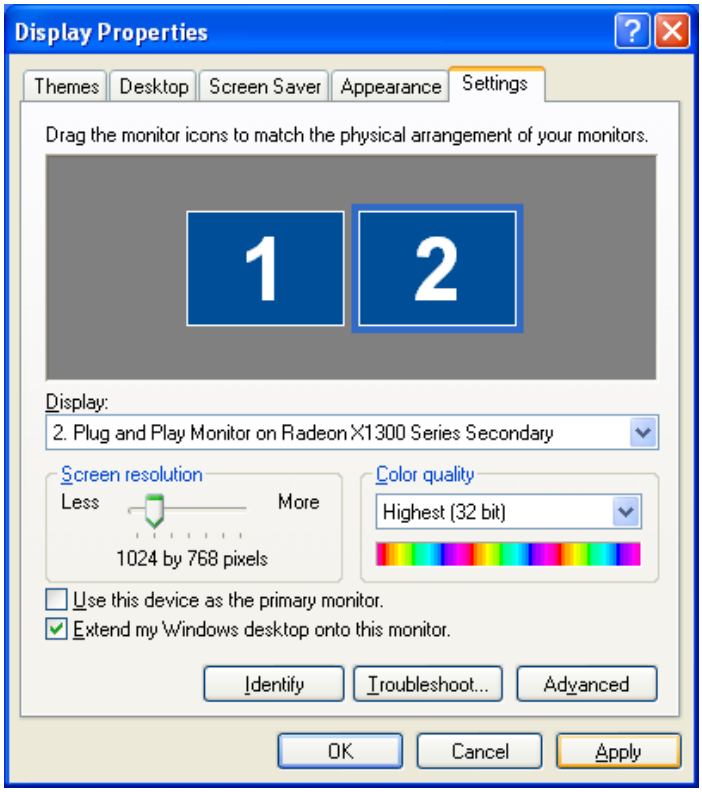
  - *Screen Mode*
    - *Single:* This supports only one monitor.
    - *Extension:* This supports multi monitors.
    - [...]: This button supports advanced functions about under Extension.
      If you want to select specific cameras on multi monitors, click this button. (Refer to 19p)

How to use the Multi-Monitor

From the main Desktop screen, right click in an empty position and select “Properties”. Then select “Settings” for the dialog as follows.



Click monitor “2”, and select “Extend my Windows desktop onto this monitor.” Click “Apply”, and then “OK”



- *Full Screen:* Start the system without any menu or buttons-full screen on the video only.
- *Auto startup:* Start the main program automatically when the Windows system starts.
- *Auto Startup Viewer:* Start the main video viewer with Windows startup. If only Auto Startup is selected, the system will record, even though the cameras are not viewing.
- *When close viewer, close all service:* Select this box to stop all the services when you exit the main screen.

Note: The system will stop recording if you exit the main viewer screen.

- Video Type
  - *NTSC*
  - *PAL*
- CCTV

- Control Key
  - *Disable Ctrl+Alt+Del:* Check this box to disable the use of Ctrl+Alt+Del to reset or disable programming functions in Windows. This also locks the Exit and Minimize buttons.

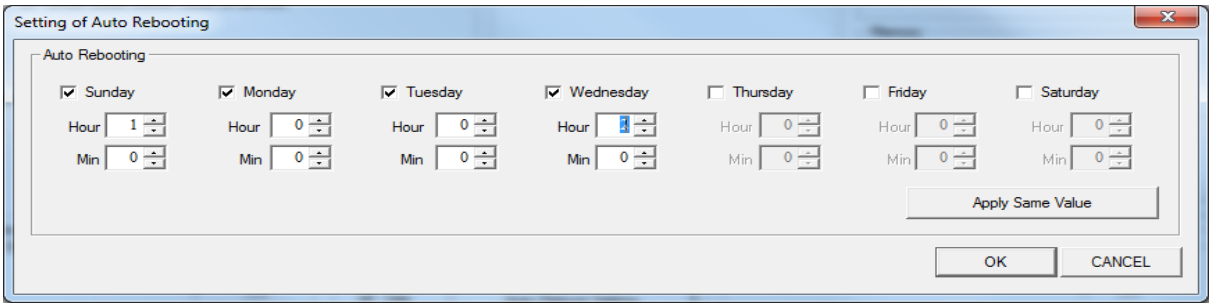
- Instant Recording
  - *Use Instant Recording:* Allow instant recording of cameras based on user intervention. This enables the instant recording button on the main viewing screen.
- Message
  - *Hide RMS Message:* Hide connect or disconnect message of RMS (notification of remote connectivity).
- Memory
  - *Enable Large Memory:* This option lets you tune the use of memory and memory address space in your computer. It is used to allocate more memory to applications and less memory to the operating system. This option increases the size of the user process address space from 2 GB to 3 GB. This can improve performance of servers that run virtual-memory-intensive applications. If you experience the "Out of Memory" dialog when using 64Channel DVR/NVR with D1, you can check this option to resolve the problem. This option need to restart the operating system.

Important warning

This option can cause the VGA card load fail. VGA card load fail results in pink screen on DVRViewer. Please restore this option if you have any problem after check this option.

- Site Information
  - *Site:* Define the name of site.
  - *Location:* Specify the system location.
- Display
  - *Border:* Show a white line between cameras
- LogFile Setup
  - *Interval of Motion Event:* Set the interval for logging motion to the log file. By setting the logging interval longer, the log file will be smaller (default = 60sec)
  - *Use Motion log:* If you don't want to look for motion log, uncheck this function.
- Viewer Mode
  - *Shut Down*
    - *Use:* Check to select that you want the system to shut down at a particular time.
    - *Time:* Configure the time when the system will be shut down.

    Note: The system will need to be restarted manually.
  - *Auto Reboot*
    - *Use:* Check to select if you want the system to reboot at particular times.
    - *Day Selections:* You can set up a schedule of time, date a day of the week
    - *Apply Same Value:* If you set Sunday's options, you can apply this button to set all the days the same.



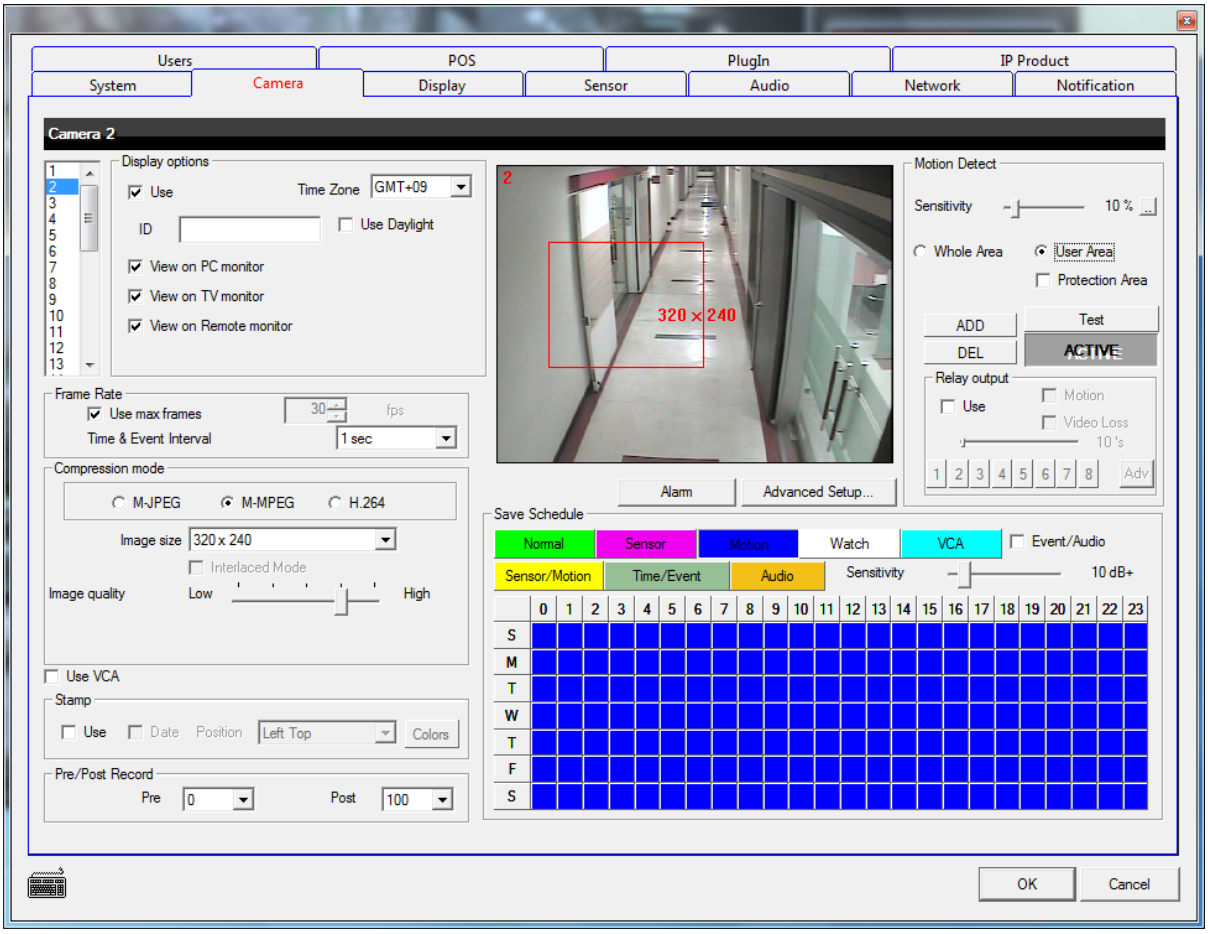
- *Watchdog*
  - *Use H/W:* In case there is a malfunction, the system will complete a hardware reset of the system to try and correct the error.
  - *Interval:* You can choose the interval time for the system to check for defects.
  - *Reconnect time of IP camera:* When IP camera is disconnected, try to connect to IP camera per interval time.

- *Backup setup:* Set the Back-up option or manage schedule of back-up (refer to section 7-7 Auto Back-Up)

- *Save Config:* User can save DVR configuration value to the *.ini file.

- *Restore Config:* User can load DVR configuration value from the *.ini file. And user has to restart the DVR Viewer. But user must not use the *.ini file that user created on the other DVR system.(e.g. After saving A.ini file on system A, user must not load A.ini on system B. User have to use A.ini file on system A only)
- *Render Type:* You can choose D3D or GDI according to user's PC environment. D3D is default value. When you use VCA, you should set up this option to D3D. You should choose GDI option when VGA card does not support D3D or perform well.

4.3. Camera & Motion Setup



- Display Options

  - *Use:* Check this box to enable the chosen camera on the specified channel in the Camera box.
  - *ID:* Individual Camera ID description.
  - *View on PC monitor:* Check to enable the image to be viewed on the PC Screen.
  - View on TV monitor: Check to enable the image to be viewed on the TV Screen.
    Note: IP cameras can't use the external video out (View on TV monitor)
    View on Remote monitor: If left unchecked, the camera can be disabled for remote viewing.
  - *Time Zone:* Get the Local Time Zone
  - *Use Daylight:* Adjust clock for daylight
  - *Video loopback:* 0-1/2-3
    Note: This function supports to link one input to the other input using one video source

- Frame Rate

  - *Use Max Frames:* If this box is checked, the system will automatically record at the highest rate available for your system. If unchecked, you can specify the frame rate for the camera.
  - *Frame Rate:* Define the frame rate for the specified camera.
  - *Time & Event Interval:* If the Time/Event recording method is chosen, this setting defines how often images are recorded if there is no motion or sensor.

- Compression Mode

  - *Mode:* Selects either M-JPEG (smaller files), or M-MPEG (full frame recording), or H.264.
  - *Image Size:* Screen resolution.
    Note: If the system is set for NTSC, you can select 320x240 or 640x240 or 640x480
    If the system is set for PAL, you can select 352x288 or 704x288 or 704x576
  - *Interlaced Mode:* If image size is 640x480, you can select the Interlaced Mode. This reduces image tear common to 640x480 images in most DVR systems.
  - *Image Quality:* Control the quality of the image (Note: the higher the quality, the larger the files size)

- *Display VCA:* Select this box to display VCA information on Viewer

- Stamp

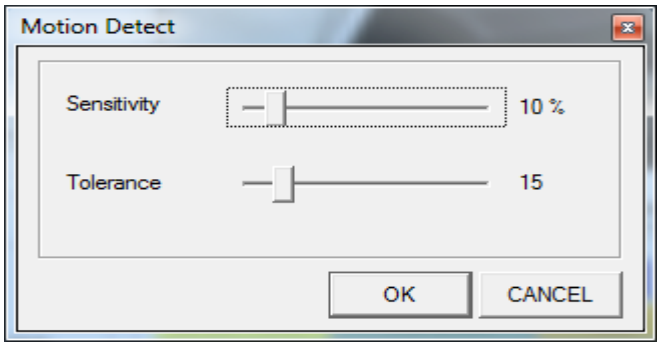
  - *Use:* Select this box to have the time displayed on the recorded image.
  - *Date:* Select this box to add the date to the recorded image.
  - *Position:* Select the location of the Time/Date stamp.

- Pre/Post Record: You can define the number of frames that will be recorded before and after detecting motion
  - *Pre:* Define the number of frames to record before detecting event.
  - *Post:* Define the number of frames to record after detecting event.

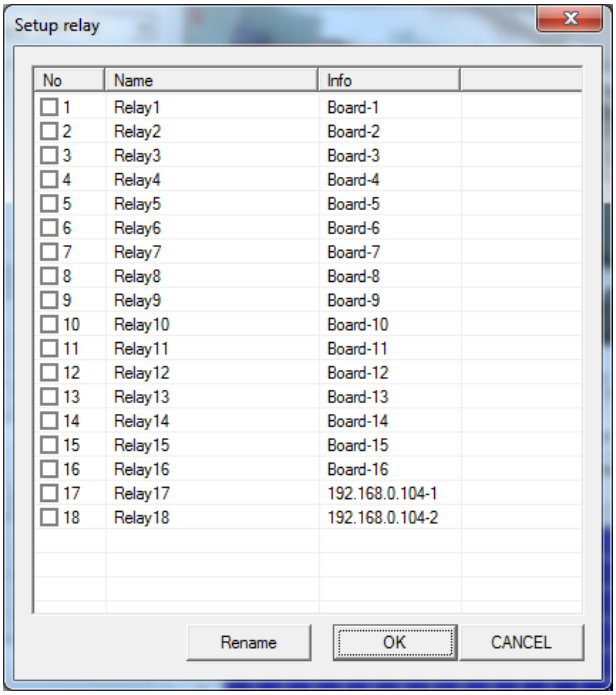
  Note: If you are recording audio, it is best to set the number of "Post" recording to 30 framers or more.

  *When user use the IP products, the unit of this value is number of second. E.g., Pre=3sec.(not frames), post=100sec.(not frames)

- Motion Detect
  - *Use Camera MD:* Use motion detection function from IP camera, in this case, do not use s/w motion detection from DVR. It will be activated when you use IP product only.
  - : Lunch IP camera Setup webpage. This will be shown IP product only.
  - Sensitivity: Defines the percentage of sensitivity–lower is more sensitive (the default value is 10%).
  - : This is advanced button about Tolerance limit
  - *Tolerance:* If there is a recording problem (always recording over night) due to the camera noise at night time, you can adjust the sensitivity by the control of "Tolerance". Lower value is more sensitive

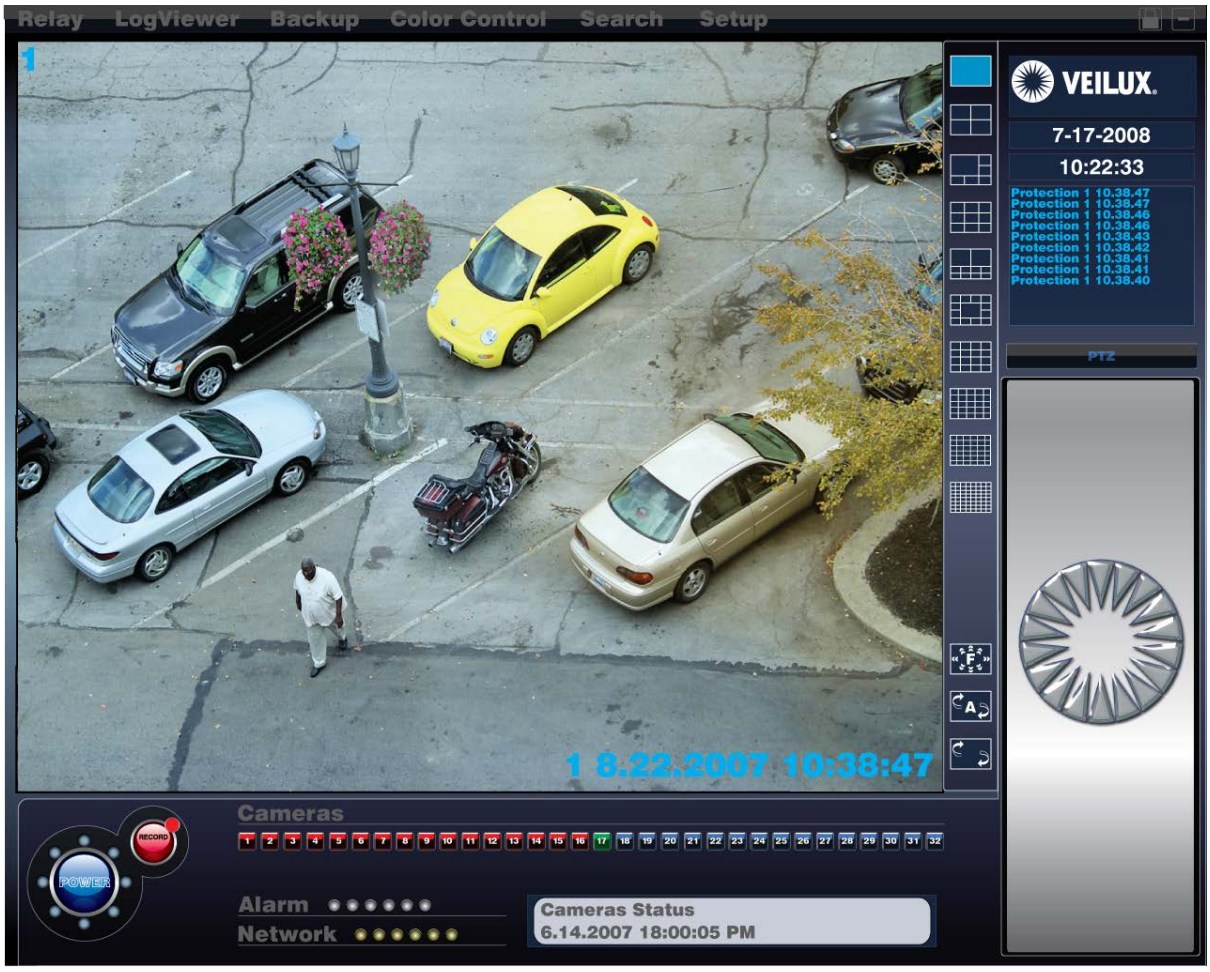


- *Whole Area:* Motion will be detected anywhere in the screen.
- *User Area:* Motion will be detected in defined areas.
- *ADD:* To add an area for motion detection, click the ADD button, and define the range by clicking the area and making a box around the area you want for detection. The system will display a red box around the new area (see the sample picture below).
- *Delete:* To delete an area previously defined, select the defined box, and then click the DEL button.
- *Test:* Activate this button and the screen will display detected areas as red dots. This is useful in defining motion areas.
- *ACTIVE:* When the motion is detected, this button with highlight and indicate that the system will record. Use this to verify that the Sensitivity is set correctly.
- *Relay Out*
  - *Use:* If you want motion to trigger a relay, activate the settings here. (Additional equipment is required to send the Output. Use to extend relay or rename relay, click “Adv” button
  - *Motion:* You can trigger a relay when motion event
  - *VideoLoss:* You can use a video loss event to trigger a relay output

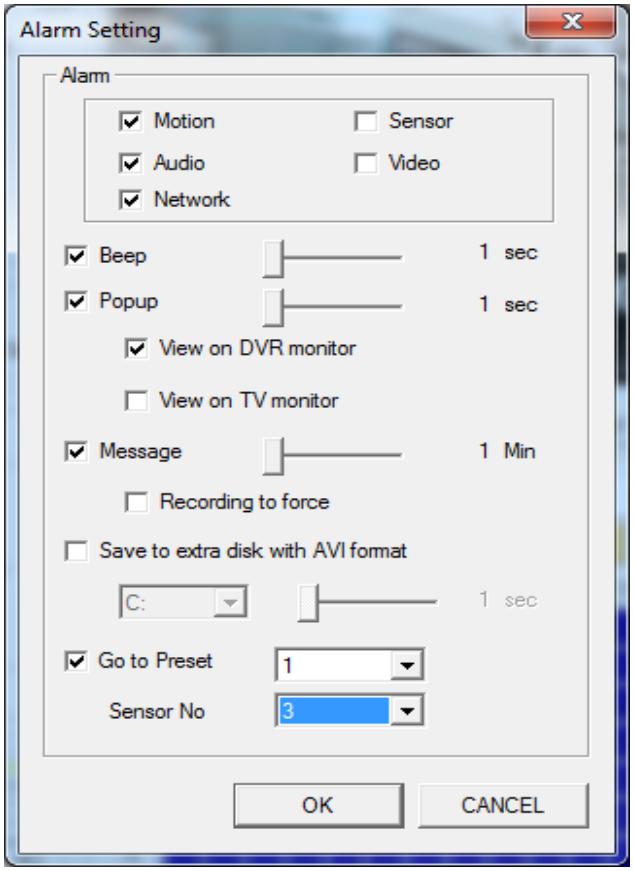


Protection Area: You can mask an area on fixed cameras for privacy.(defined the same way as with Motion Detection); Not used with HW compression cards and IP Cameras.

- Motion Trace: If motion is activated, the area of motion is shown in the DVR Viewer as seen below.



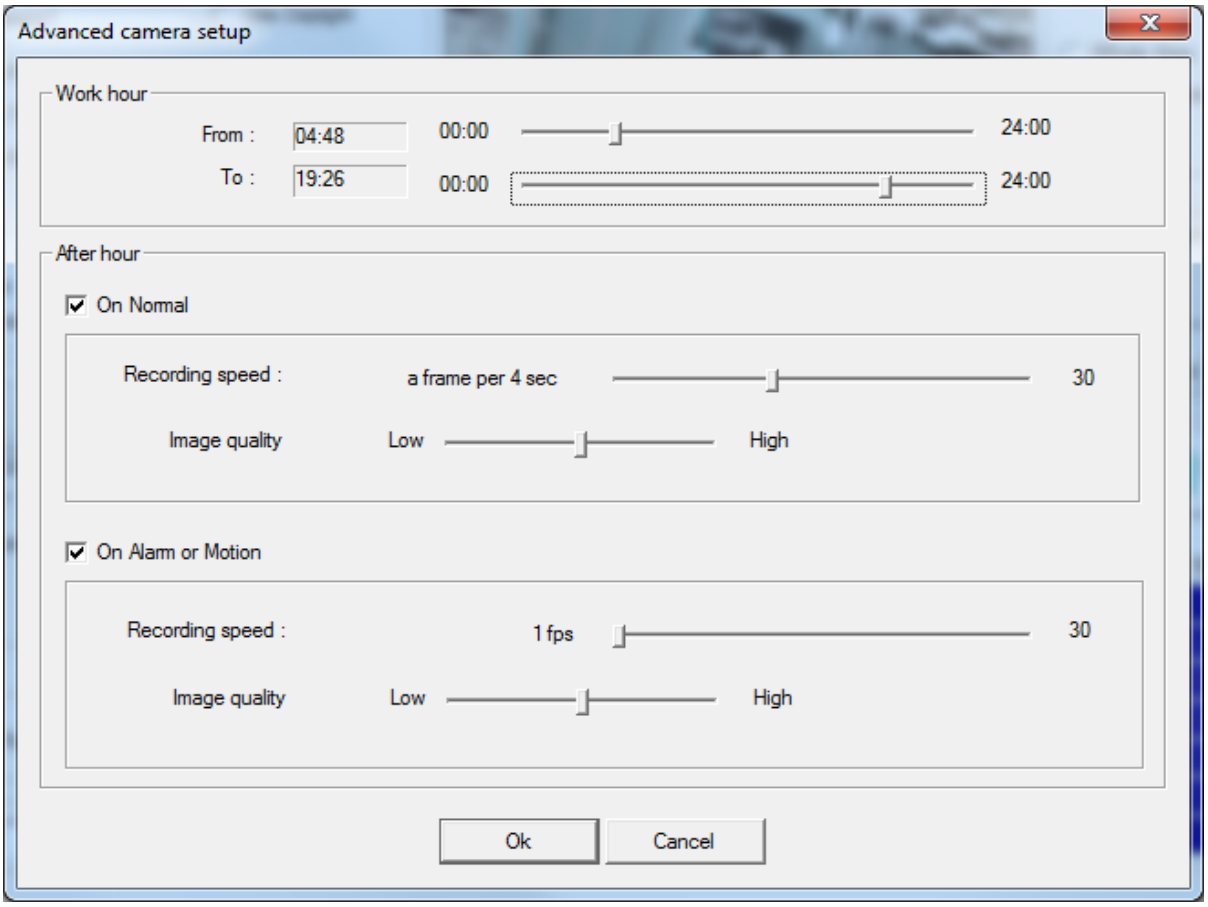
- Alarm Setting



- Event: Check event type.
- Beep: Creates an audio alert if an alarm event occurs for the defined number of seconds. The audio occurs through both the internal and external speaker, but only the external speaker works in Microsoft® Windows® 7.
- *Popup:* If a motion, sensor or video loss event occurs, the corresponding camera will popup for the set amount of seconds.
- *View on DVR Monitor:* If a motion or sensor event is occurs, the corresponding camera will popup for the set amount of seconds.
- *View on TV Monitor:* If a motion or sensor event is occurs, it can be displayed on a TV monitor connected to the composite output for the set amount of seconds.
- *Message:* A visual ALERT message can be displayed on the screen, for the defined number of seconds. The alert can be turned off by user input. This is only controlled by a video loss or sensor event.
- *Recording to force:* After sensor event occurs, it will be recording compulsively full frames of the channels which are set by sensor recording method. To stop the forced recording, click the "Alarm Area" (in red) on the DVR Viewer screen.

- *Save to extra disk with AVI format:* If a motion or sensor event is occurs, the system can save current images as an AVI file during the event interval to disk.
- *Go to Preset:* If a motion or sensor event occurs, it can move a camera to preset.
- *Sensor No:* If you select sensor no, when sensor event occurs, camera will move as preset no to be set.

- Advanced Setting



- Work Hour: This is the time that the system records under the normal configuration

  - *From:* Start Time
  - *To:* End Time

- After Hour: The system will record based on the advanced setup settings during the time outside the time zone established as Work Hour.
  - *On Normal:* The System will record data regularly.
  - *On Alarm or Motion:* The system will record at a different rate of motion.

4.4. Recording Setup

Your DVR has 8 different recording modes that you can choose. The recording schedule is based on a one week schedule. Define the schedule according to the day and hour in each day.

- Normal Mode

  In this mode, the DVR continuously records images from the selected camera.

- Sensor Mode

In this mode, the DVR will record the images only if any event occurs from a sensor connected to the system. If you select Event/Audio, system will record the images whether audio is detected or sensor does.

- Time/Event Mode

The system will continuously record one frame per period set (1,5,10,15,20,30 seconds, 1, 5, 10, 15,20, 30, 60 minutes). If there is motion or sensor detection, the DVR will begin recording the set frame rate. Select the Event/Audio option to record at the higher frame rate if only audio is detected.

- Motion Mode (most commonly used mode)

In this mode, the system will record images only if motion is detected within the defined areas. Select the Event/Audio option to record at the higher frame rate if only audio is detected.

- Motion Sensor Mode

In this mode, the system will record images when a sensor event has occurred and/or if motion is detected. Select the Event/Audio option to record at the higher frame rate if only audio is detected.

- Watch Mode

In this mode, system will not record any images from the selected camera, and will only display the live image on the screen.

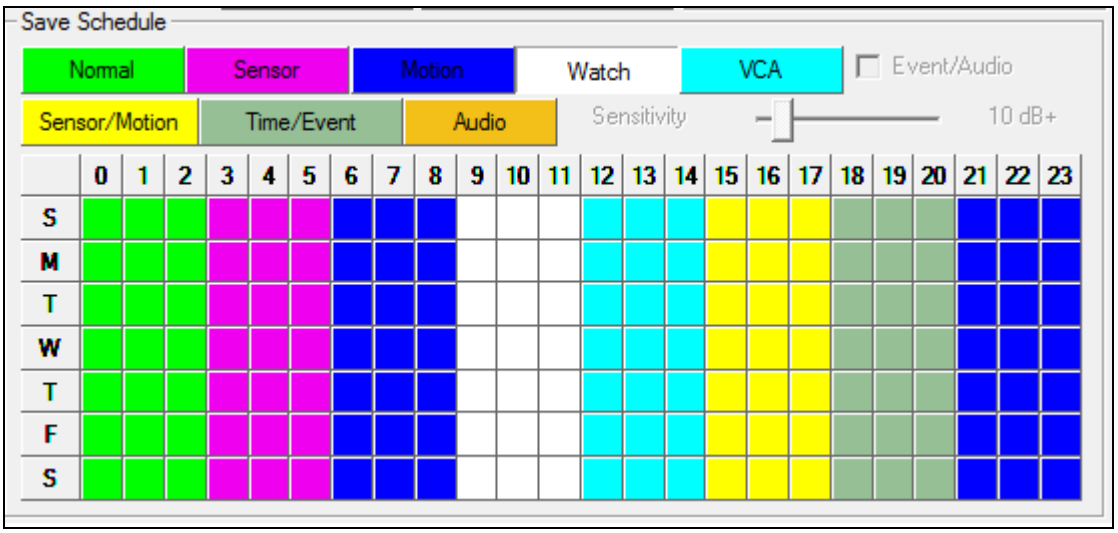
- Audio Mode

In this mode, the system will record images only if audio occurs.

- Event/Audio

Check this option, the system will record images according to chosen recording mode and when audio event occurs additionally. It is operated with every recording mode, except Normal, Audio and Watch mode. (You cannot set this option with IP products like DIP, DIC series.)

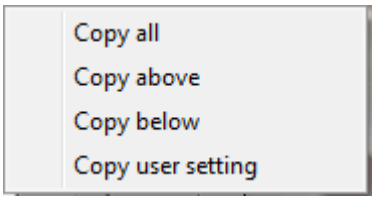
- Recording Schedule example



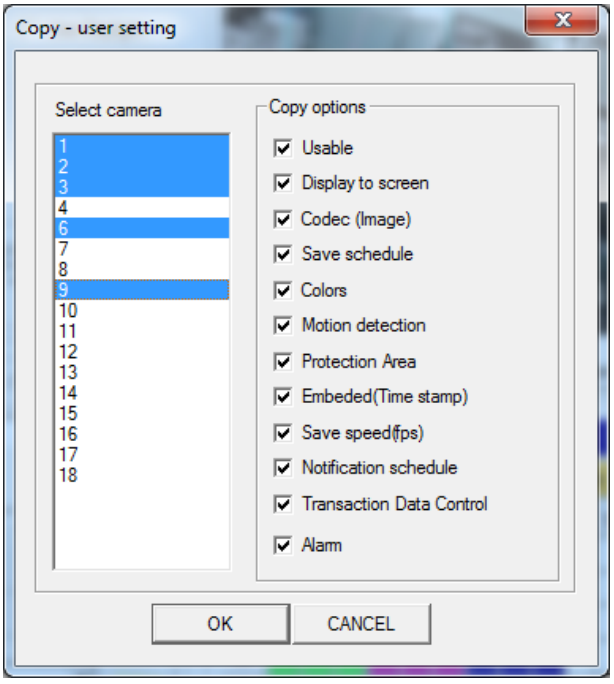
- Sunday – Saturday (00:00 – 03:00): The system will record all captured images.
- Sunday – Saturday (03:00 – 06:00): The system will record only if a sensor event is detected.

- Sunday – Saturday (6:00 – 9:00): The system will record only if any motion is detected.
- Sunday – Saturday (12:00 – 15:00): The system will record if a VCA event is detected.
- Sunday – Saturday (15:00 – 18:00): The system will record if a sensor event is detected, or if there is motion detected.
- Sunday – Saturday (18:00 – 21:00): The system will record based on the Time/Event Mode and at the frame rate indicated in that section. If there is motion, the system will record at the faster rate.
- Sunday – Saturday (21:00 – 24:00): The system will record captured images if motion is detected.

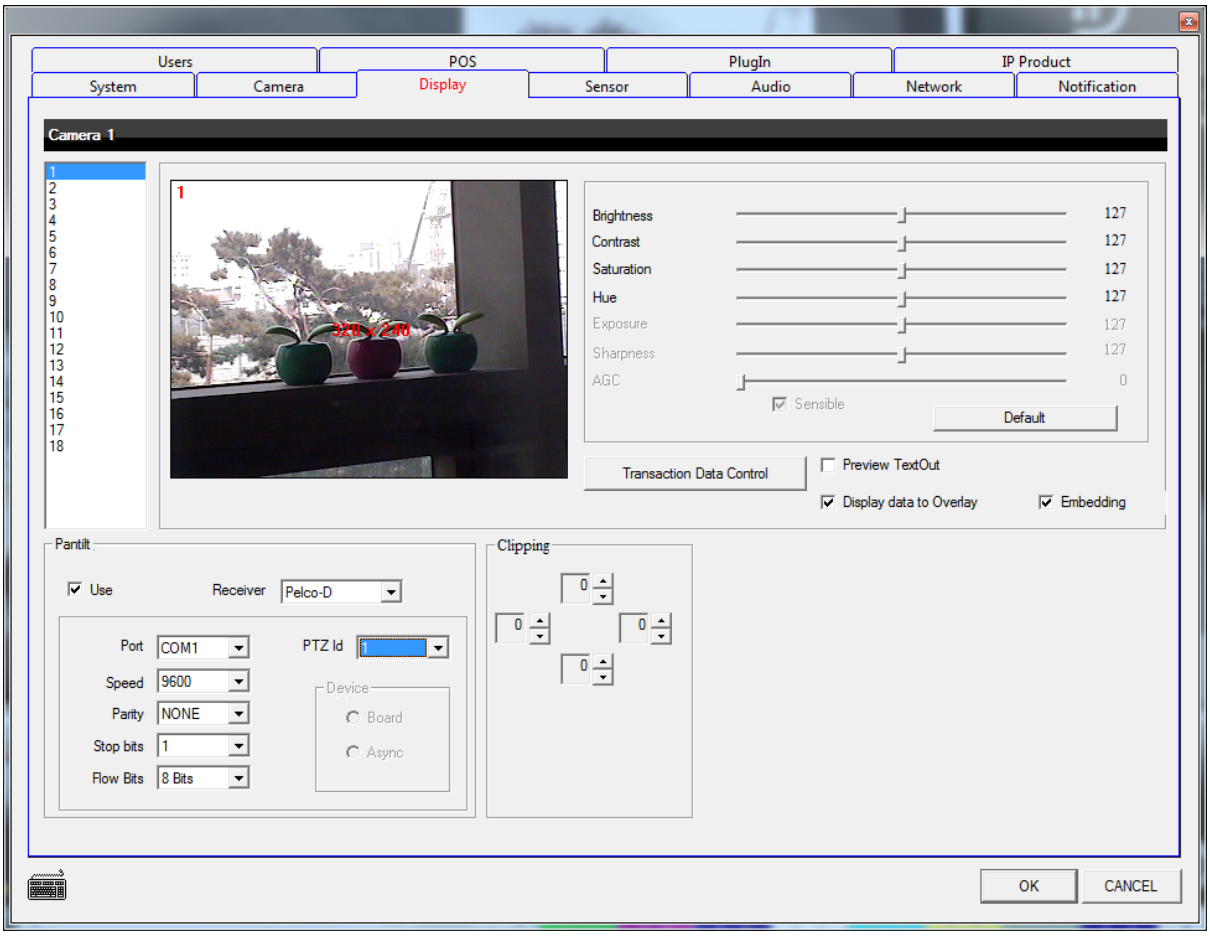
Note: If you are settings any or all of the cameras the same, you can set one camera and then copy it to others by right clicking on the screen to bring up the following window. Then choose the appropriate selection to copy the settings to other cameras.



Choose the options from the following window. The blue highlighted cameras will receive the copied settings.



4.5. Display & Pan/Tilt Setup



- Screen Control Option: Change the brightness, contrast, saturation and hue of each camera.

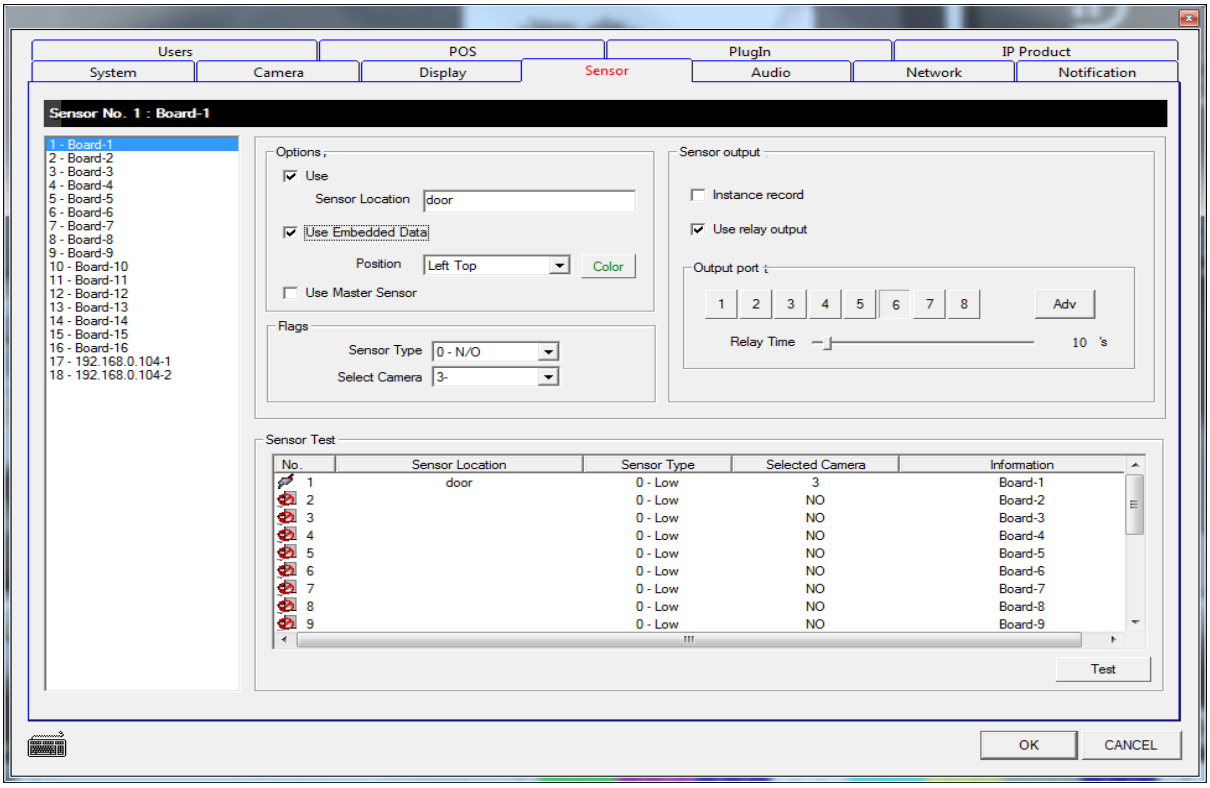
Note: The automatic gain control feature is only available on some systems, and should only be used in circumstances where the video signal is too weak or too strong.

- *Transaction Data Control*: If the system has been built to support the POS function, this button will be active
- *Preview Textout:* Display a sample of what the overlay text will be for the POS.
- *Display data to overlay:* Turn on or off the POS display on the live screen.
- *Embedding:* If a capture board supports POS function, Video and Pos data will be displayed separately or embedded into the video.

- Pan/Tilt: Select the settings to match your PTZ camera.

- Clipping: It is to stretch the actual image to hide the extra space (like black line). The unit is pixel.

4.6. Sensor Setup



- Options
  - *Use:* Select this box to enable the sensor function on the DVR.
  - *Location:* This is a description of the sensor location.
  - *Use Embedded Data:* When sensor is active, senor location will be embedding on image until event is inactive.
  - *Use Master Sensor:* If you select one sensor as master sensor, when master sensor is active, other sensor will be unused. When master sensor is inactive, other sensor will be changed as use.

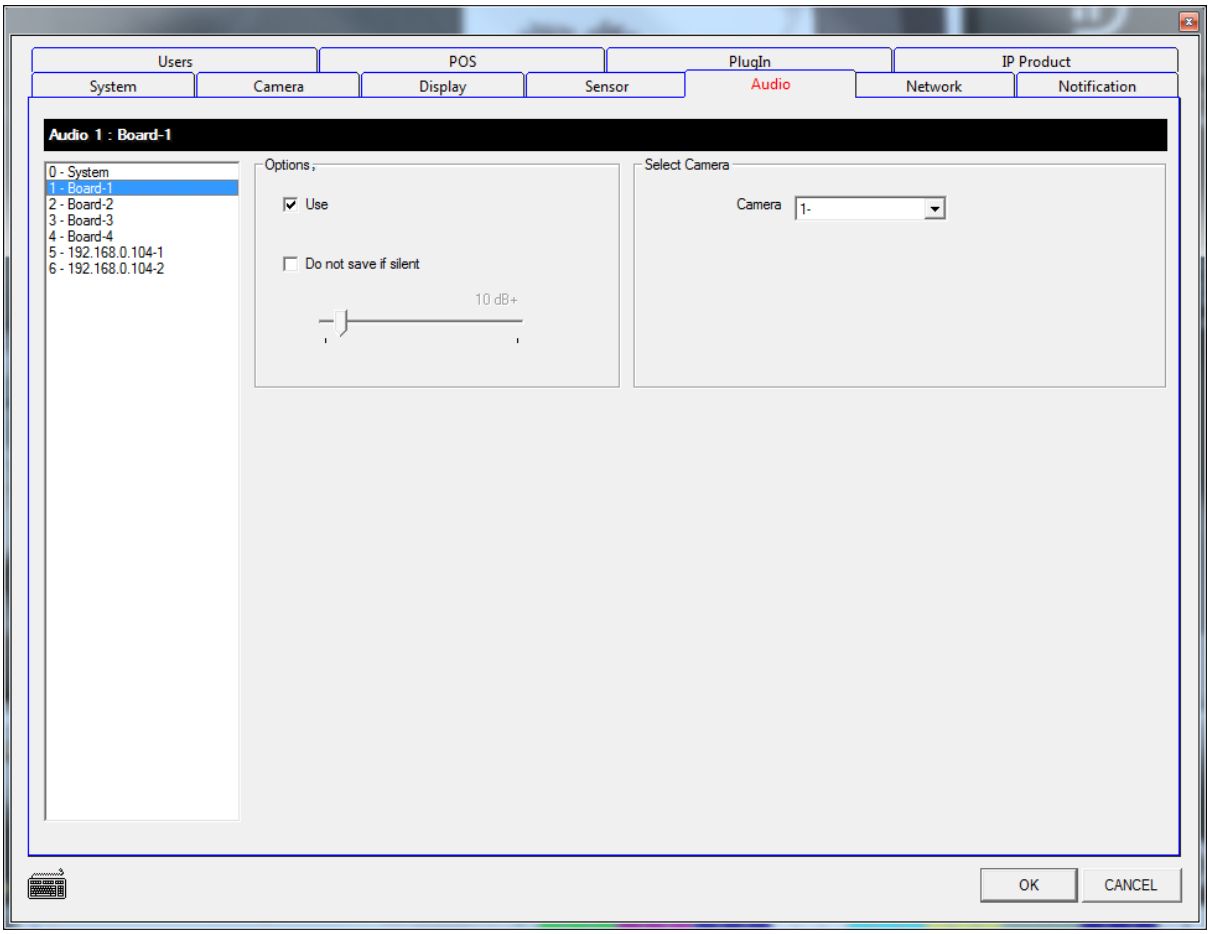
- Flags
  - *Sensor Type:* Define the type (open or close) of signal from the sensor.
    N/O – Normally Open N/C – Normally Closed
  - *Selected Camera:* Configure a sensor to a specific camera.

- Sensor Output
  - *Instant record:* If you want to record all camera when sensor event, check this box. Recording to stop use main UI instant recording button.
  - *Use Relay Output:* If you want to use the sensor to activate a relay, check this box to define the output. (Additional equipment is required to send the Output.)
  - *Relay Time:* Define how many seconds are set between triggering the relays.

- Sensor Test

: Active : Not active

4.7. Audio Setup



- Options
  - *Use:* Check to enable audio on a particular channel.

Note: Channel 1 is the audio from the sound card. Higher channels are from the DVR components. Channel 1 is the only channel that is available to listen to live – the other channels record and can be played back only.

  - *Do not save if silent:* The system will not use the audio to start recording. Motion and sensor recording will continue to be in effect, however.

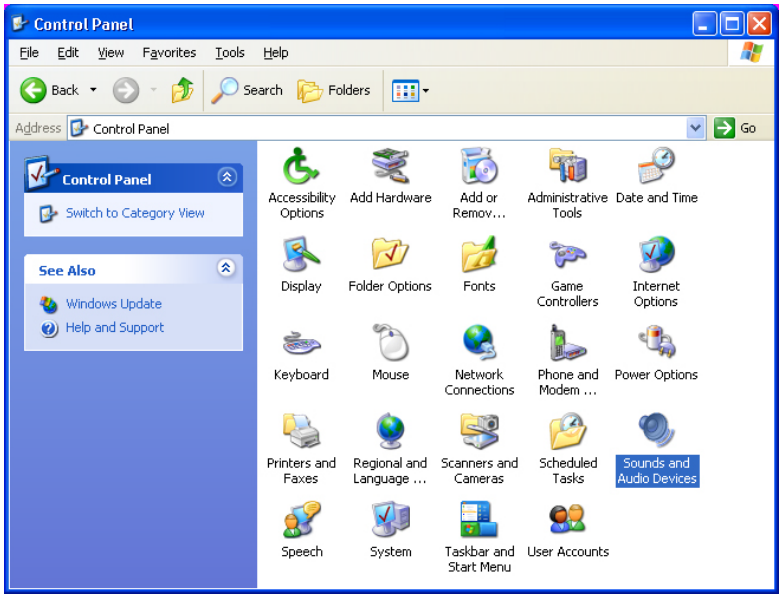
- Select Camera: This will associate audio to a particular camera.

If you want to communicate from the remote site to the DVR using audio, you must have a sound card. In the case of two-way audio, the sound card channel does not record that audio. You must use channel 2 or above for recording audio on the DVR.

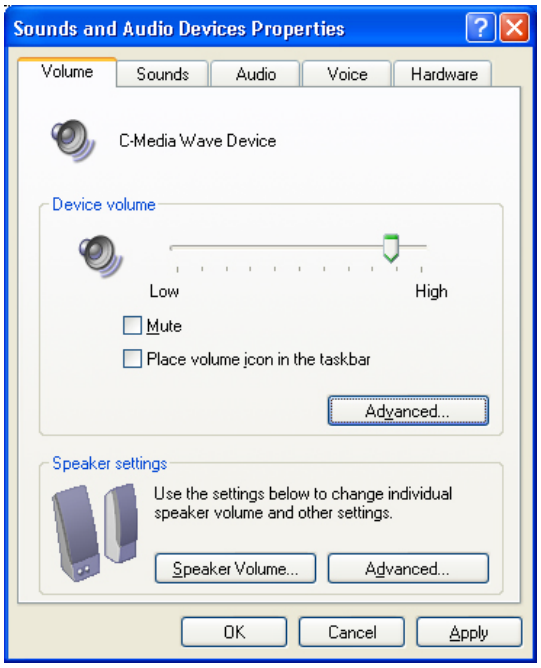
How to check the audio if it is not working properly:

- Problem 1: Check if there is another recording program is running. If there is another recording program running, the recording function on the DVR system will not work.
- Problem 2: Check the path for input signal and make sure it is set up as Microphone. Review the following steps. (OS: Windows XP)

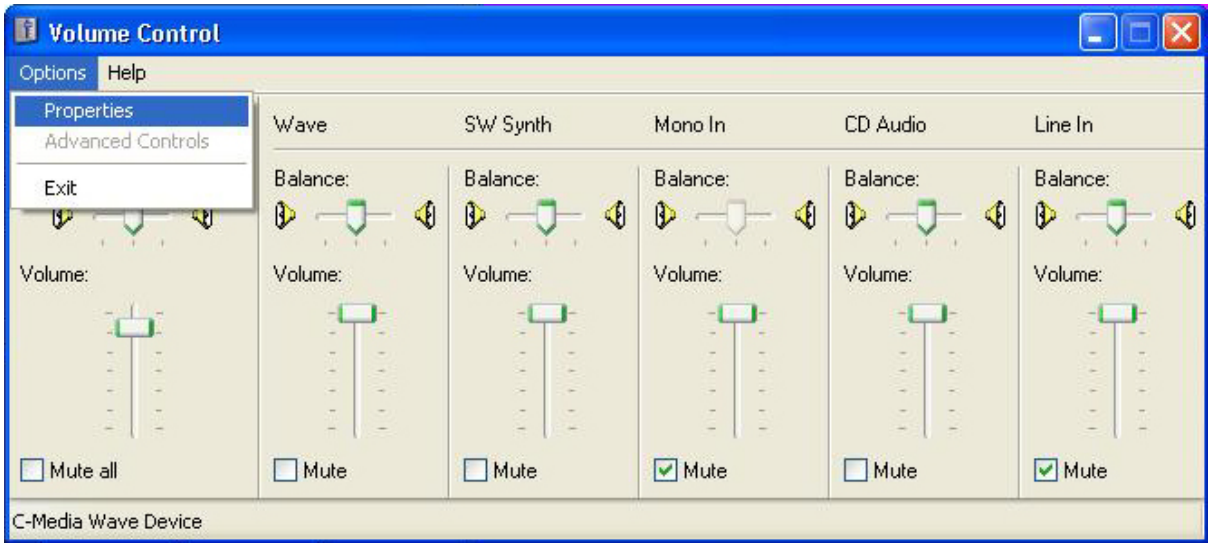
Run 'Sounds and Audio Devices' in the Control Panel



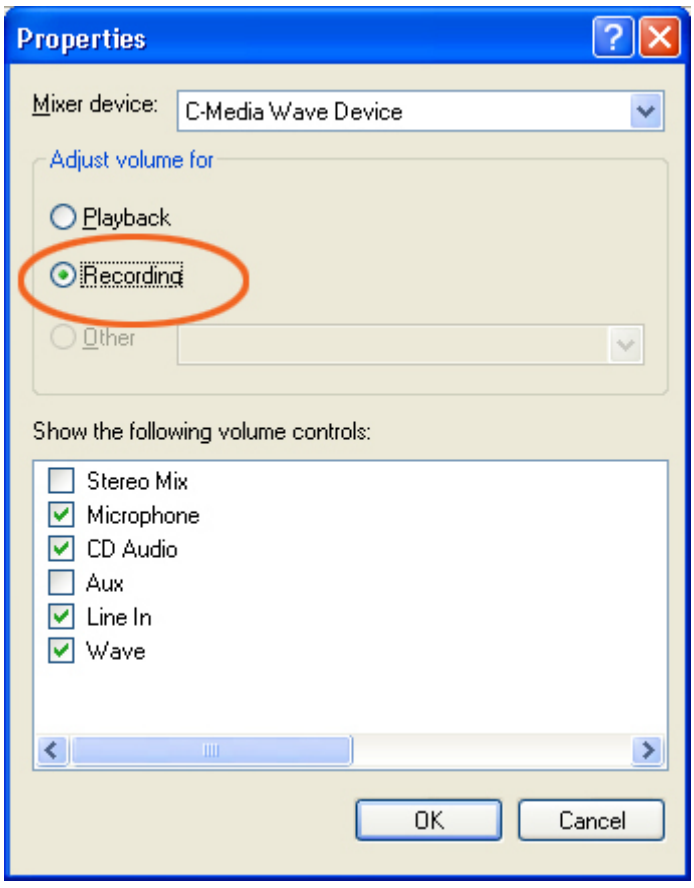
Click Advanced in under "Sounds and Audio Devices Properties



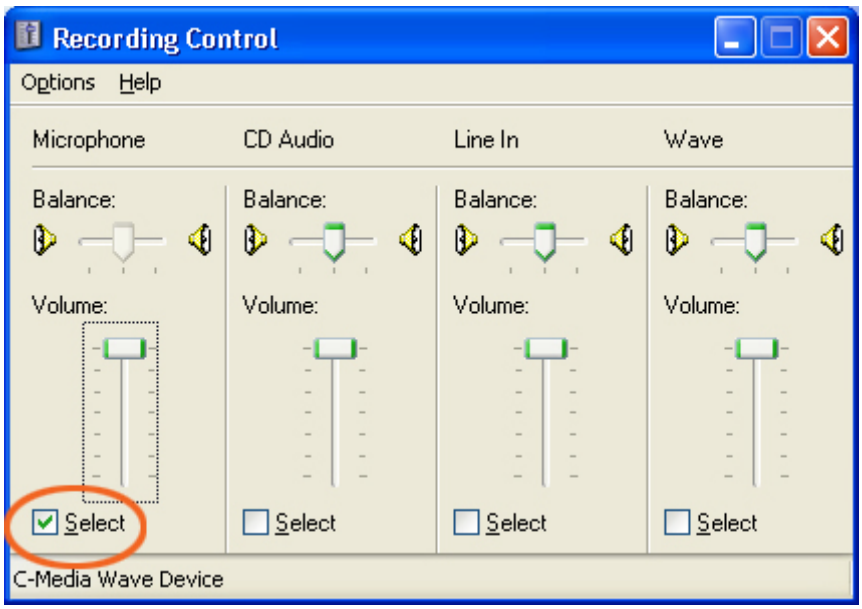
Select Options, Properties.



Select ‘Recording’ and click “OK”.

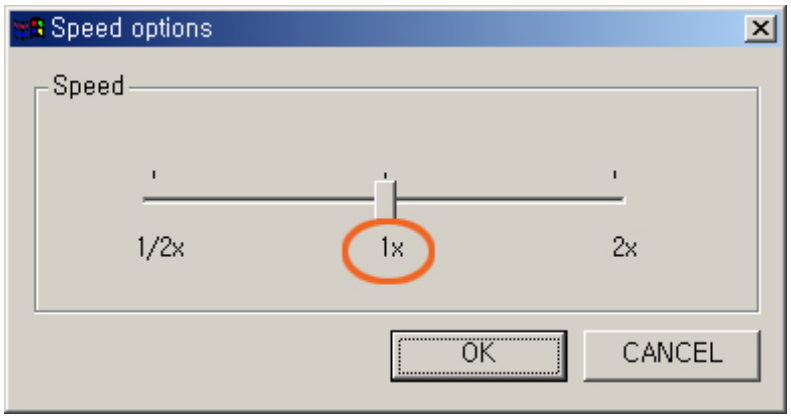


Click the “Select” box for the Microphone. If you want to playback the video with audio on the remote site, you also need to take the above steps on the remote PC.

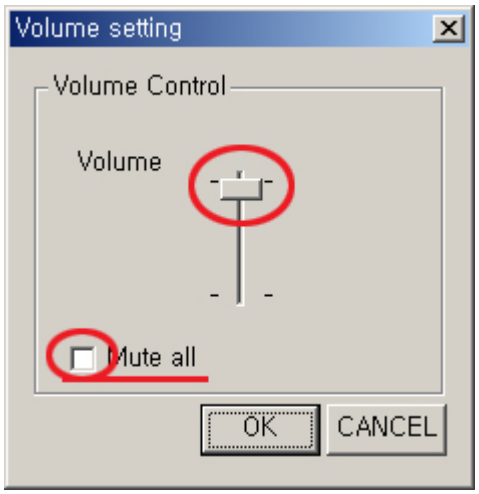


After setting, test if the setting is correct or not as follows.
Start, Program, Accessories, Entertainment, Sound Recorder

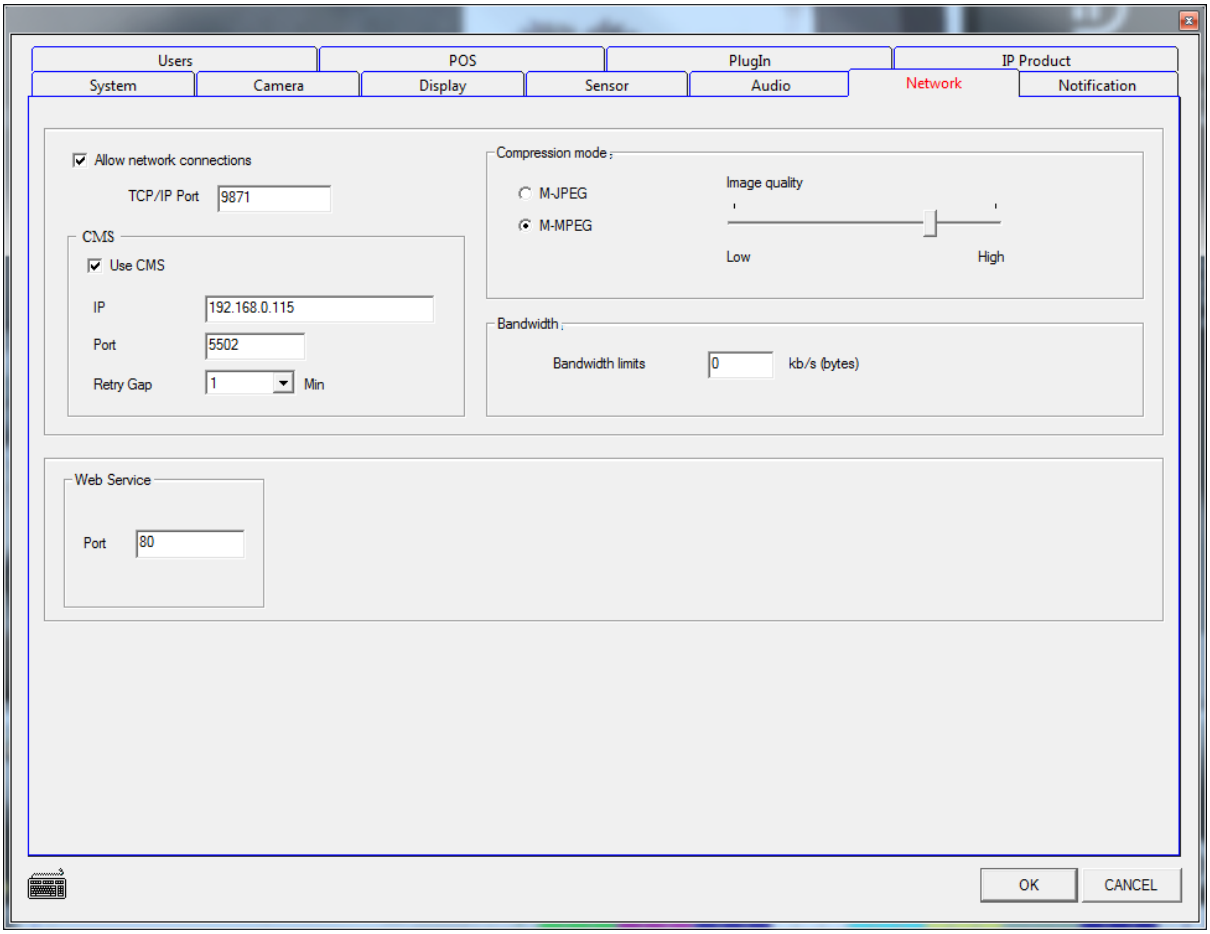
Note: From the DVR software, when you playback the recording data with sound, you must set the playback speed to 1x.



Also, please check the “Mute all” settings and volume level.



4.8. Network Setup



- Allow network Connections

  - *Allow network Connections:* Allow network (remote) connections to the DVR.
  - *TCP/IP Port:* TCP/IP port number. (The default port is 9871).

  Note: This feature can be useful if you are using multiple DVRs with only one static IP address. Each DVR should have at least 10 ports between them (i.e., DVR1 = 9871, DVR2 = 9881, etc.). If you use different TCP/IP ports, you can port map the incoming connections to specific DVRs. See your network administrator for more information.

  * If you want to use RMS through the WAN(Internet), you have to forward the port number 9871~9876 to connect on DVR server side before anything else.

- Compression Mode

  - M-JPEG, M-MPEG: Choose the video transmission compression method, either M-JPEG or M-MPEG (faster)
  - *Image Quality:* Control the quality of the images that will be sent to the remote site.

- Bandwidth

- Bandwidth limits: 0 kb/s (bytes)

- Default: 0 (Maximum Bandwidth) Other input values limit the bandwidth the system uses for transmission. It is input as kbytes/sec. (I.e., 128 = 128Kb per second of bandwidth.)

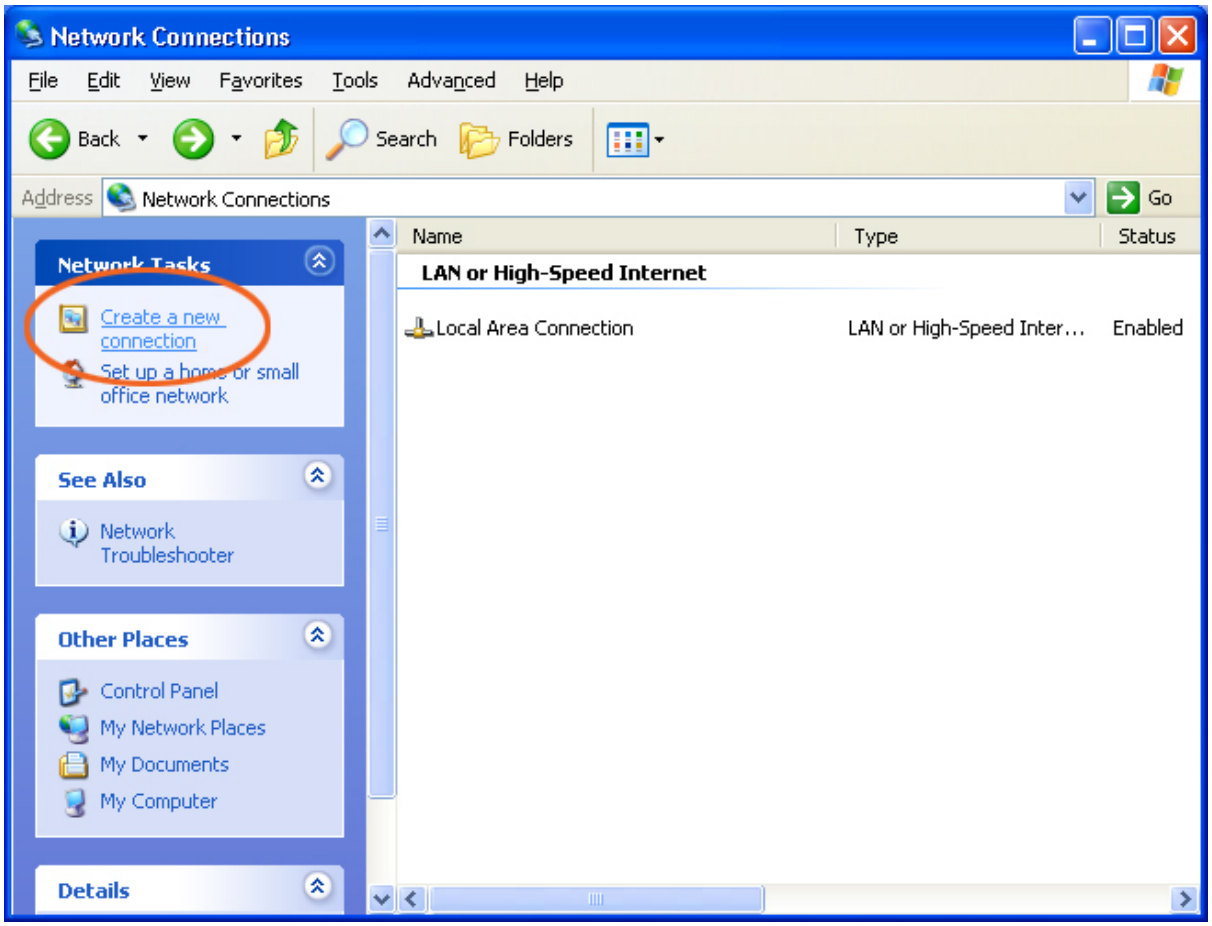
- CMS (Central Monitoring Software)

  - *Use CMS:* If this box is checked, the DVR Server try to connect with the CMS server once it is started. After the connection is established, it will send alarm notifications to the CMS server and interact with CMS server.
  - *IP:* Enter the CMS server IP Address
  - *Port:* Enter the CMS server Port number.(default 5502)
  - *Retry Gap:* Select the number of minutes between retries when connection is lost. A selection of 0 minutes means that the DVR will not retry when if a connection fails with CMS server.

- Web Service:

  - *Port:* Default HTTP port is 80

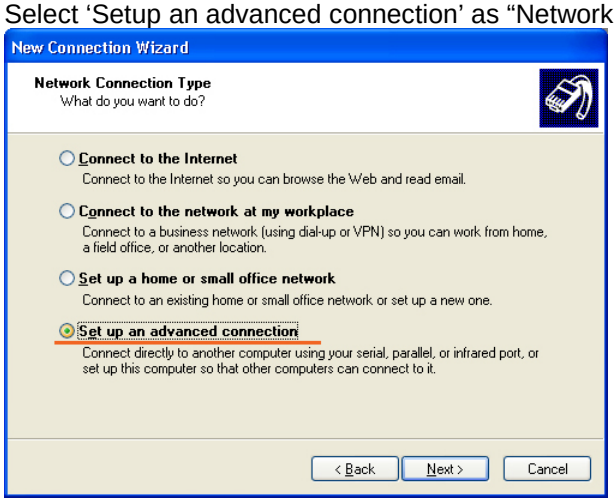
Modem (Dial-up) Connection Settings (only for systems with a modem connection)
• The following settings occur in the operating system (Windows XP is shown)
Control Panel
Network Connections
Create a new connection



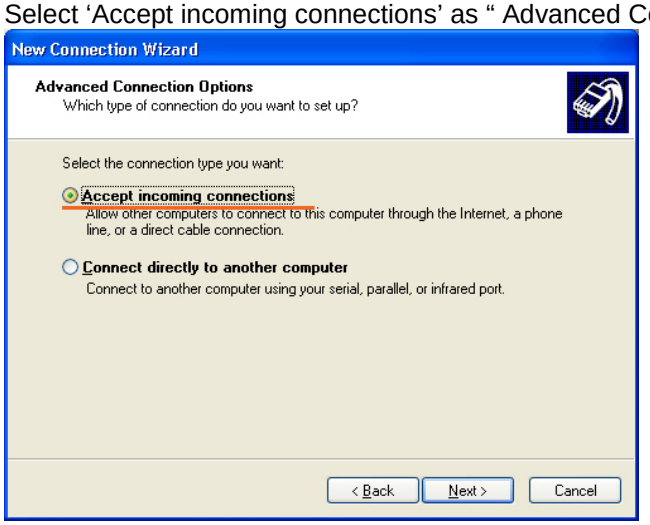
New Connection Wizard' shows, click 'Next'.

New Connection Wizard
Welcome to the New Connection Wizard
This wizard helps you:
• Connect to the Internet.
• Connect to a private network, such as your workplace network.
• Set up a home or small office network.
To continue, click Next.
< Back
Next >
Cancel

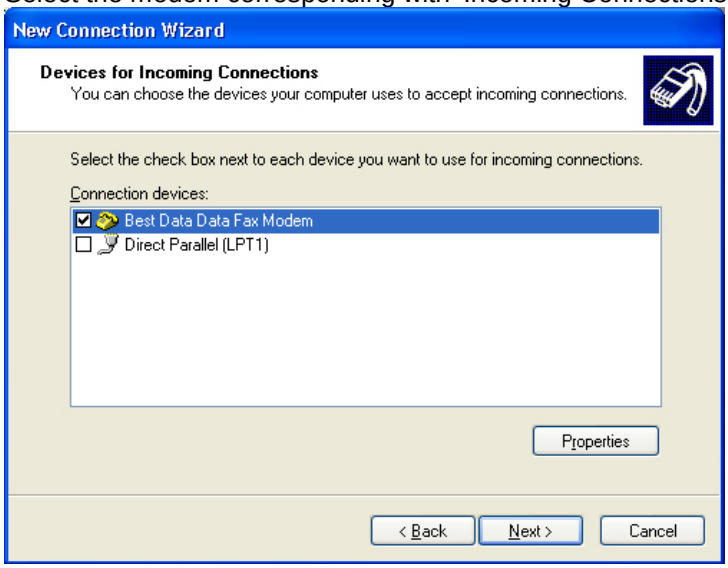
Select 'Setup an advanced connection' as "Network Connection Type" and click 'Next'.


New Connection Wizard
Network Connection Type
What do you want to do?
Connect to the Internet
Connect to the Internet so you can browse the Web and read email.
Connect to the network at my workplace
Connect to a business network (using dial-up or VPN) so you can work from home, a field office, or another location.
Set up a home or small office network
Connect to an existing home or small office network or set up a new one.
Set up an advanced connection
Connect directly to another computer using your serial, parallel, or infrared port, or set up this computer so that other computers can connect to it.
< Back
Next >
Cancel

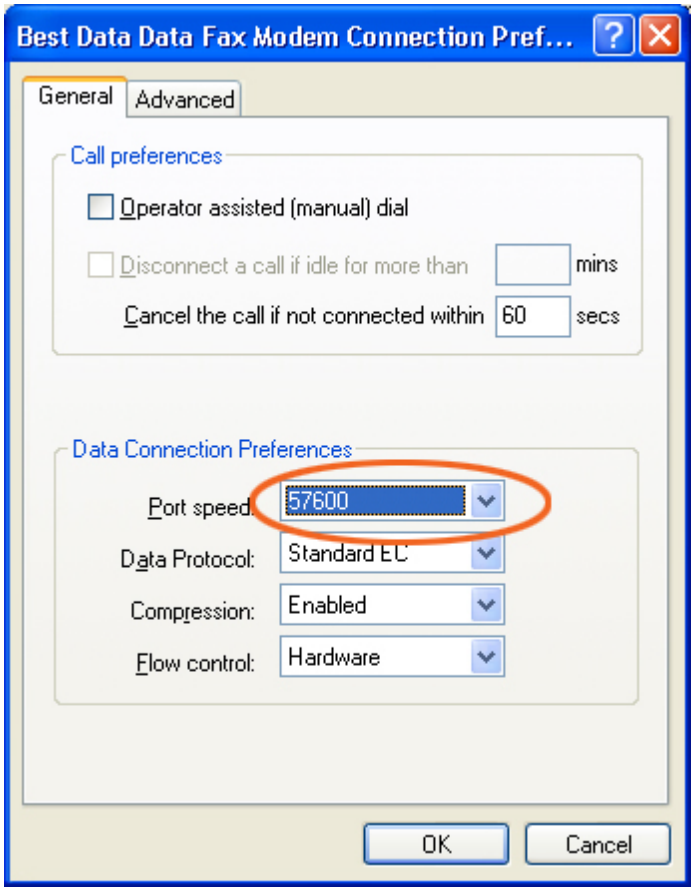
Select ‘Accept incoming connections’ as “ Advanced Connection Options” and click ‘Next’.


New Connection Wizard
Advanced Connection Options
Which type of connection do you want to set up?
Select the connection type you want:
Accept incoming connections
Allow other computers to connect to this computer through the Internet, a phone line, or a direct cable connection.
Connect directly to another computer
Connect to another computer using your serial, parallel, or infrared port.
< Back
Next >
Cancel

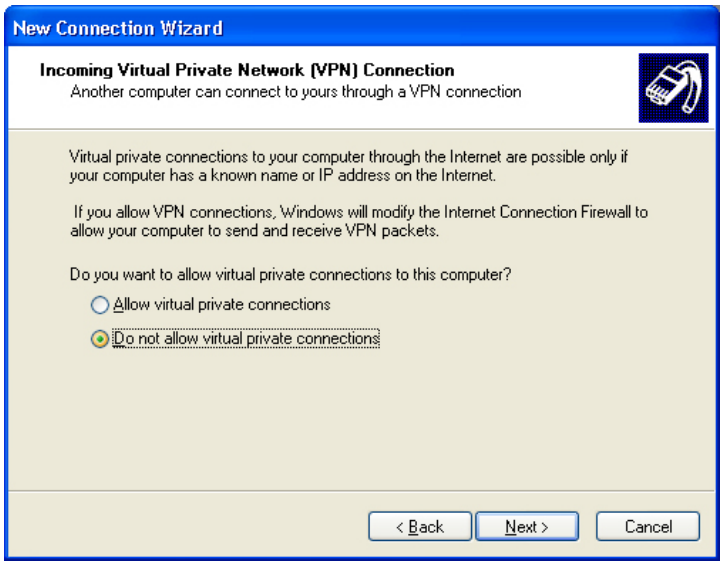
Select the modem corresponding with ‘Incoming Connections’ and click ‘Properties’.


New Connection Wizard
Devices for Incoming Connections
You can choose the devices your computer uses to accept incoming connections.
Select the check box next to each device you want to use for incoming connections.
Connection devices:
Best Data Data Fax Modem
Direct Parallel (LPT1)
Properties
< Back
Next >
Cancel

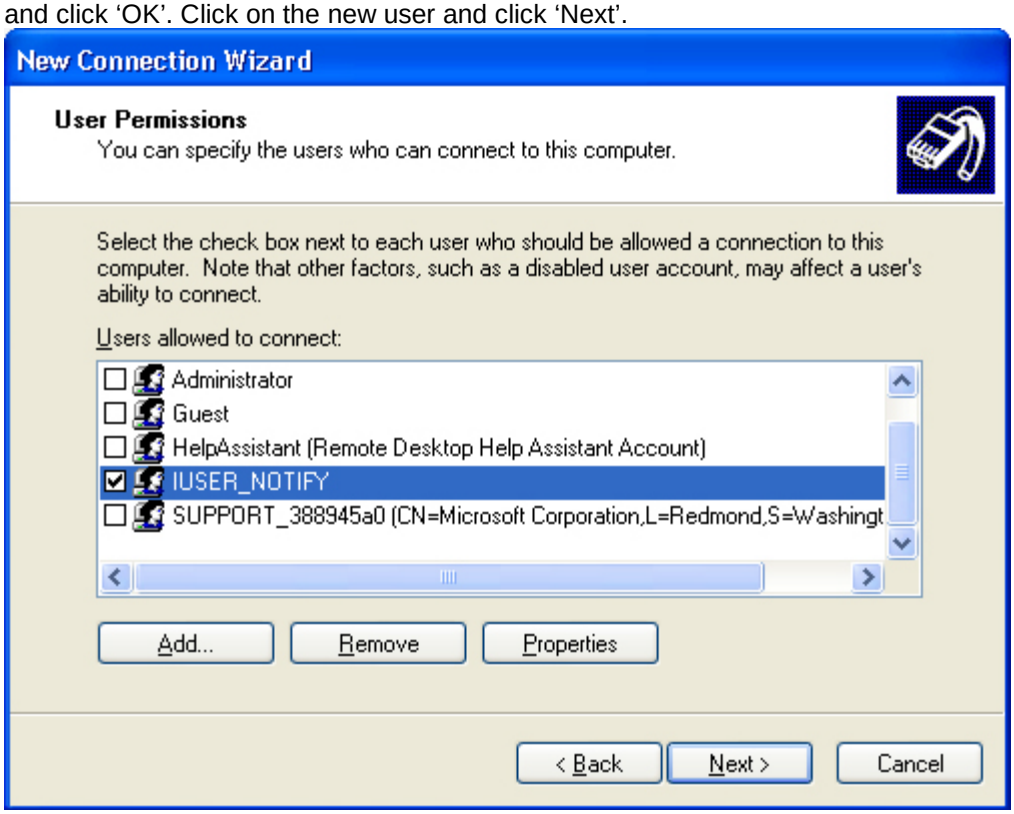
Click Properties and check that the port speed is the same as installed Modem. If yes, return to the 'New Connection Wizard' and click 'Next'.



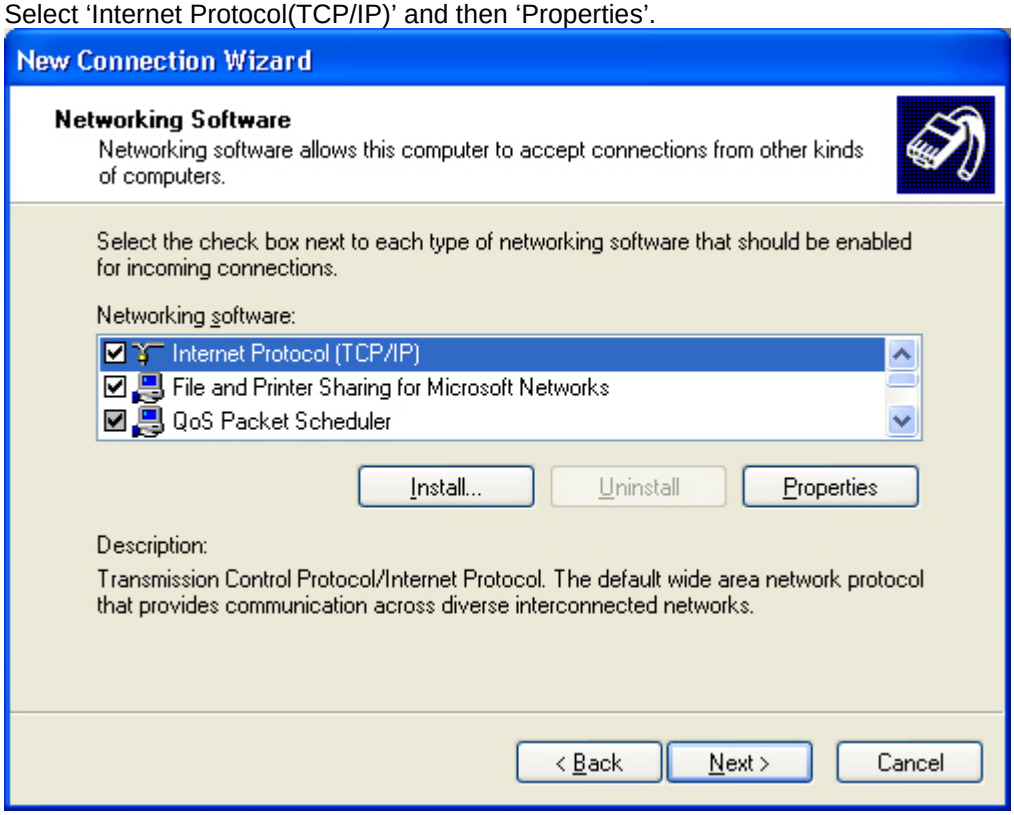
Click on the 'Do not allow virtual private connection' and then 'Next'.


New Connection Wizard
Incoming Virtual Private Network (VPN) Connection
Another computer can connect to yours through a VPN connection
Virtual private connections to your computer through the Internet are possible only if your computer has a known name or IP address on the Internet.
If you allow VPN connections, Windows will modify the Internet Connection Firewall to allow your computer to send and receive VPN packets.
Do you want to allow virtual private connections to this computer?
Allow virtual private connections
Do not allow virtual private connections
< Back
Next >
Cancel

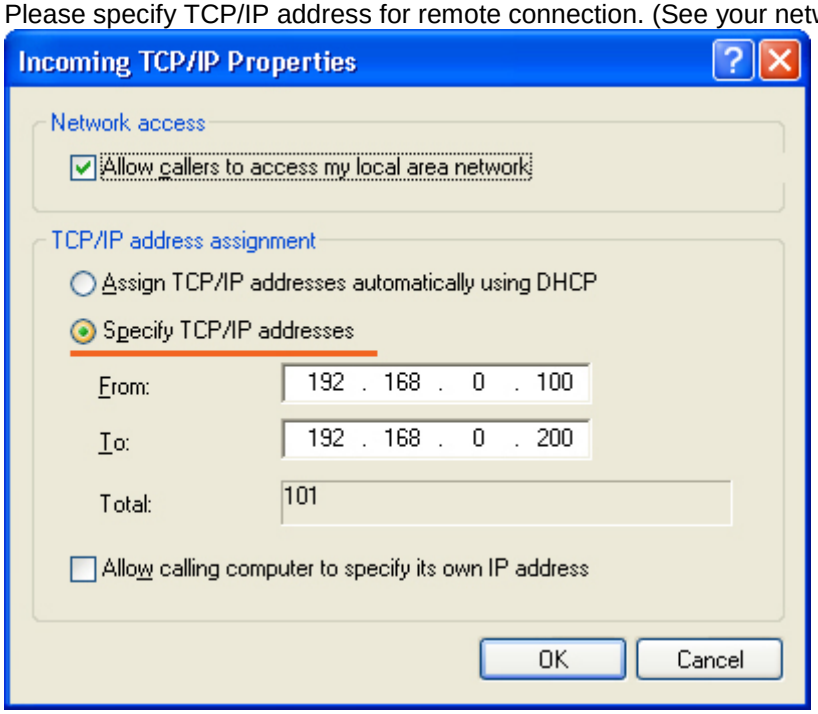
Click ‘ Add’ to register a new user for Dial-up Networking connection. Please enter a User ID & Password and click ‘OK’. Click on the new user and click ‘Next’.


New Connection Wizard
User Permissions
You can specify the users who can connect to this computer.
Select the check box next to each user who should be allowed a connection to this computer. Note that other factors, such as a disabled user account, may affect a user's ability to connect.
Users allowed to connect:
Administrator
Guest
HelpAssistant (Remote Desktop Help Assistant Account)
IUSER_NOTIFY
SUPPORT_388945a0 (CN=Microsoft Corporation,L=Redmond,S=Washingt
Add...
Remove
Properties
< Back
Next >
Cancel

Select ‘Internet Protocol(TCP/IP)’ and then ‘Properties’.


New Connection Wizard
Networking Software
Networking software allows this computer to accept connections from other kinds of computers.
Select the check box next to each type of networking software that should be enabled for incoming connections.
Networking software:
Internet Protocol (TCP/IP)
File and Printer Sharing for Microsoft Networks
QoS Packet Scheduler
Install...
Uninstall
Properties
Description:
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
< Back
Next >
Cancel

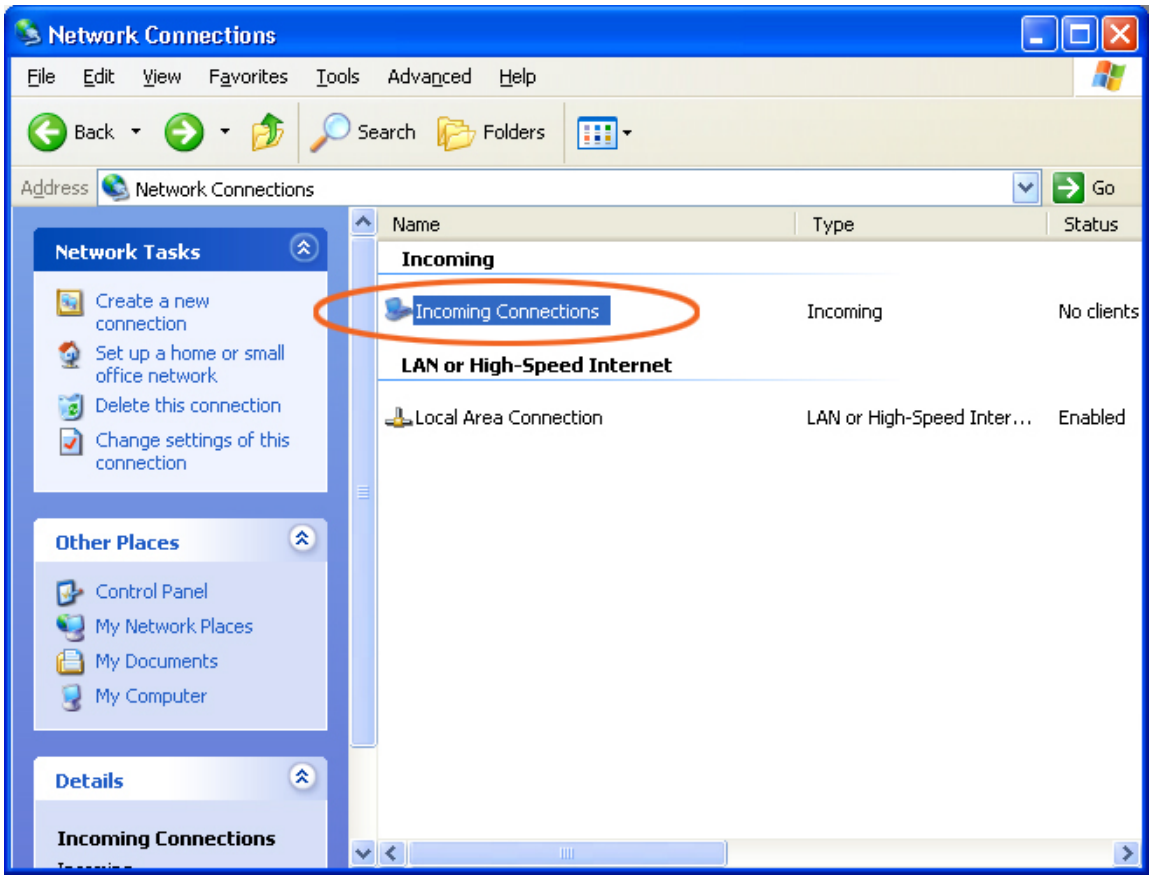
Please specify TCP/IP address for remote connection. (See your network administrator for an IP address)


Incoming TCP/IP Properties
Network access
Allow callers to access my local area network
TCP/IP address assignment
Assign TCP/IP addresses automatically using DHCP
Specify TCP/IP addresses
From: 192 . 168 . 0 . 100
To: 192 . 168 . 0 . 200
Total: 101
Allow calling computer to specify its own IP address
OK
Cancel

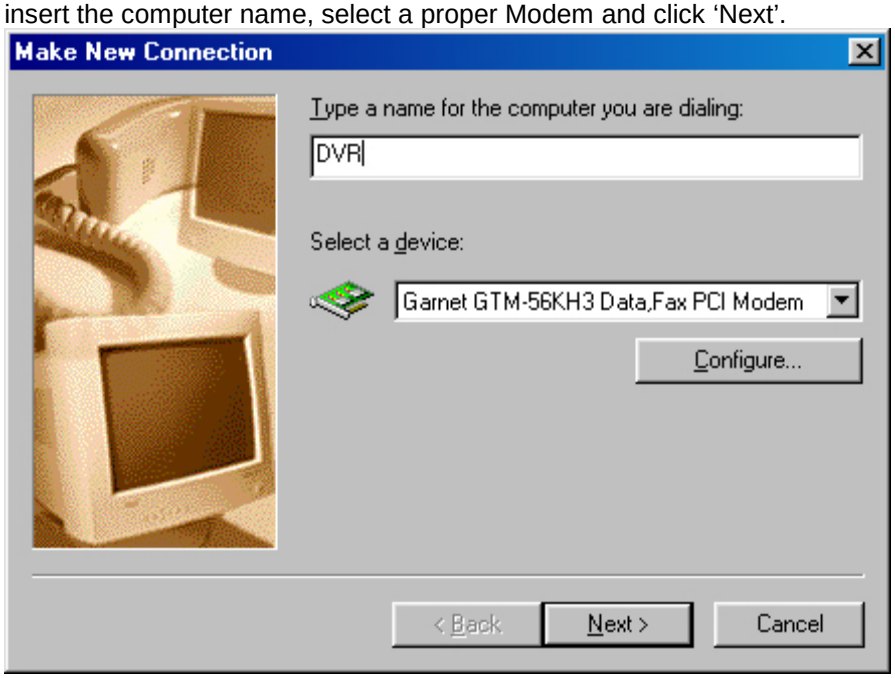
Click 'Finish', to complete the settings.

New Connection Wizard
Completing the New Connection Wizard
You have successfully completed the steps needed to create the following connection:
Incoming Connections
The connection will be saved in the Network Connections folder.
To create the connection and close this wizard, click Finish.
< Back
Finish
Cancel

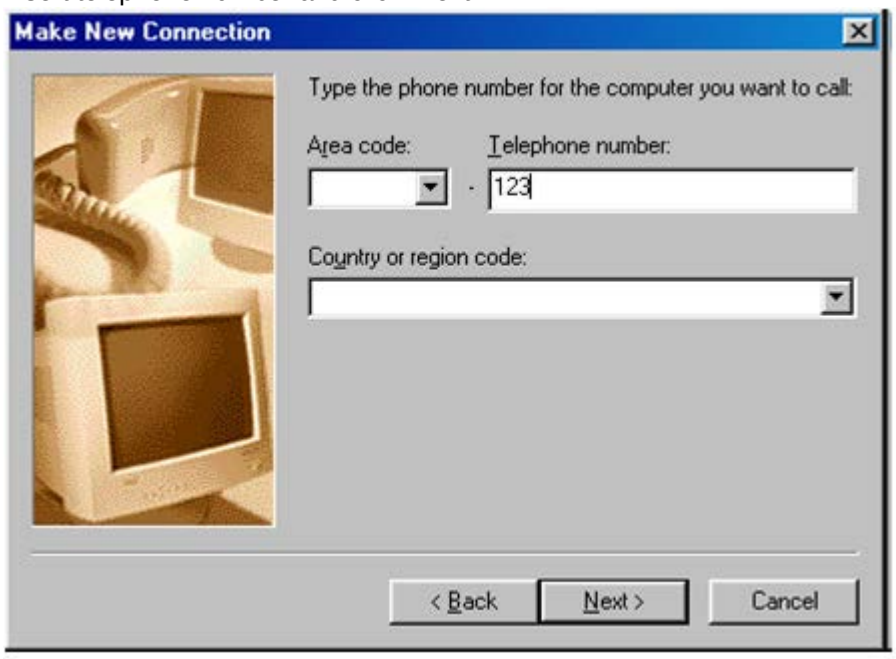
Look in 'Network Connections' , to see your new 'Incoming Connections'.



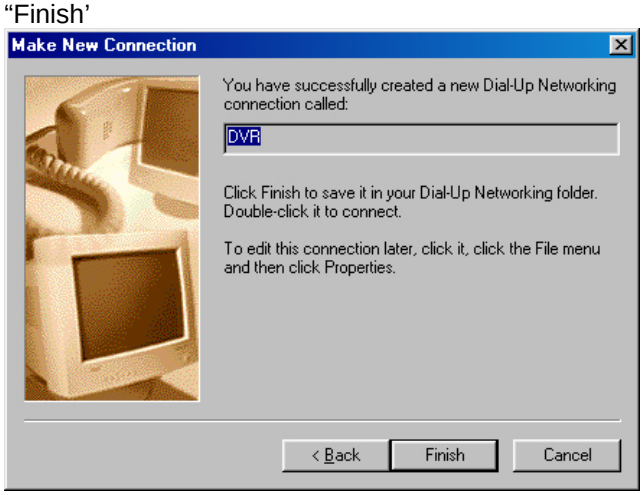
If there is no Modem connection listed and you are using Windows98 SE, correct the connection setting as follows (not needed in Windows XP)
Start□Programs□Accessories□Communications□Dial-Up Networking. Under 'Make New Connection', insert the computer name, select a proper Modem and click 'Next'.



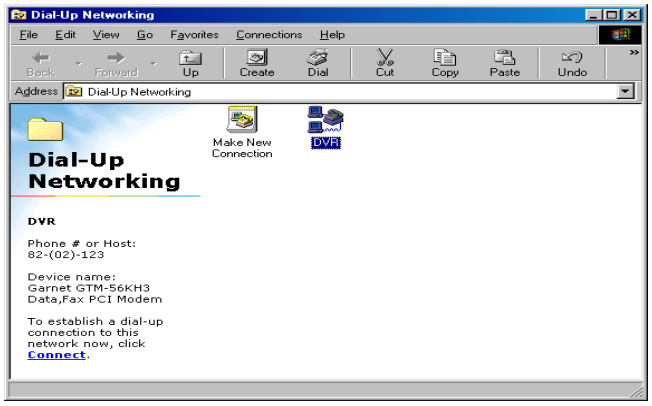
Insert telephone number and click ‘Next’.



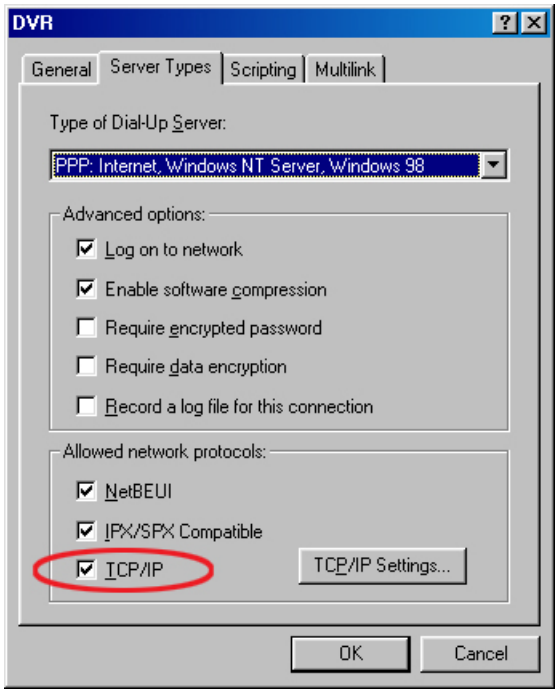
“Finish’


Make New Connection
You have successfully created a new Dial-Up Networking connection called:
DVR
Click Finish to save it in your Dial-Up Networking folder. Double-click it to connect.
To edit this connection later, click it, click the File menu and then click Properties.
< Back
Finish
Cancel

Start□Programs□Accessories□Communications□Dial-Up Networking. You should see a new icon for the connection.

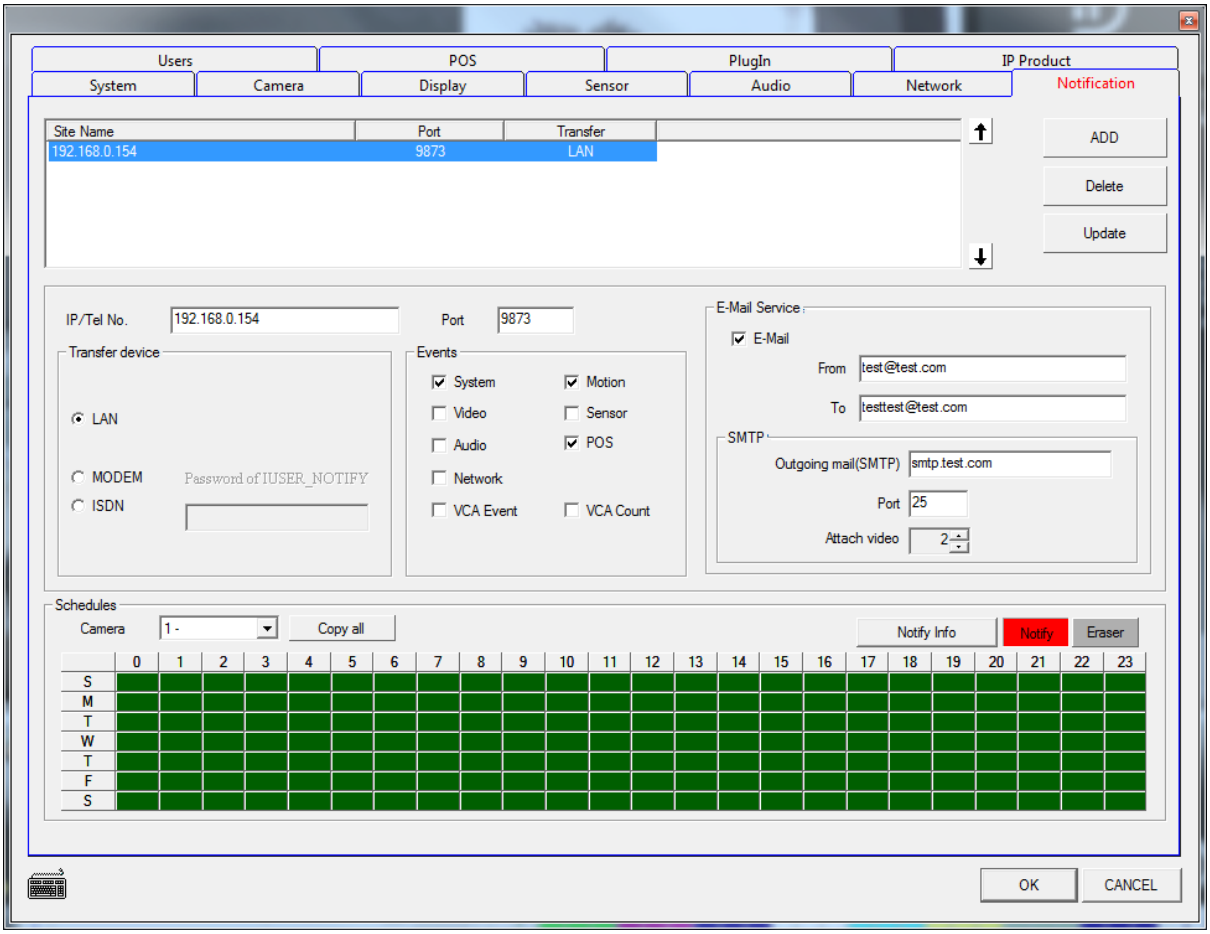


Double check the new icon, select “sever Types” and check that TCP/IP is checked



4.9. Notification Setup

You can configure Notifications that will alert users or the remote site directly when motion is detected, sensors are triggered, or other events occur.



- ADD: Add remote site with following information

  - *IP/Tel No:* The IP or Telephone number of the remote site.
  - *Port:* TCP/IP Port number.
  - *Transfer Device:* Choose a network type for the connection (LAN, Modem, ISDN)
  - *Password of IUSER_NOTIFY:* If you select MODEM or ISDN, you will need a password to login to the Remote Surveillance System.
  - *Events:* Check the types of events you want to create a notification for.
  - *E-Mail Service* (This function isn't supported for MODEM, ISDN)

- *E-Mail:* Check to send e-mail for the event.
- *From:* Type the individual's e-mail address to send the notification.(default DVR@Server.com)
- *To:* Type the individual's e-mail address to receive the notification
- *Outgoing mail (SMTP):* Type Outgoing mail Server (see your administrator if you need this information)
- *Port:* Type Port number (standard port is Port 25)
- *Attach video:* Choose the number of images to attach (if none, there will still be a detail report of the event sent to the user).

- Update: Select this option if you are modifying a notification that has already been defined.

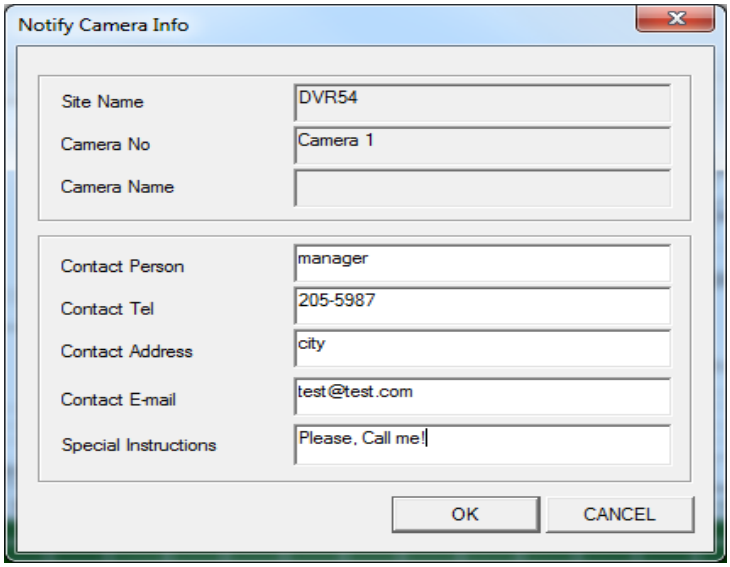
- Delete: Select this option to delete a notification that has already been defined.

- Events

  - *System:* When a user changed setting value of DVR, it notifies to RMS
  - *Motion or Sensor or Audio:* When motion or sensor or audio events happened to DVR server, it notifies to RMS.
  - *Video:* When video on/off happened to DVR server, it notifies to RMS.
  - *Pos:* It is possible to notify to RMS if DVR server enable to popup of POS action code.(Refer to 107p)
  - *Network:* When IP camera/IP Server disconnected
  - *VCA Event, VCA Count:*

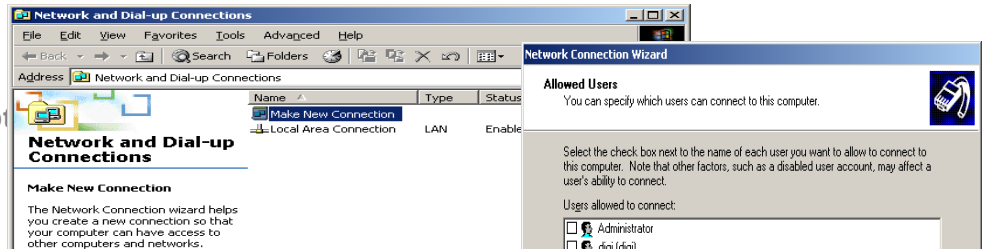
- Schedules

  - *Camera:* Select a specific camera
  - *Copy All:* Apply to all cameras.
  - *Notify Info*



  - *Notify:* Click the "Notify" button and define a schedule for notification.
  - *Eraser:* Erase selected time zone.

    ◆ Dial up connections cannot notify more than one RMS at a time.


Network and Dial-up Connections
File Edit View Favorites Tools Advanced Help
Address Network and Dial-up Connections
Make New Connection
Local Area Connection
Network and Dial-up Connections
Make New Connection
The Network Connection wizard helps you create a new connection so that your computer can have access to other computers and networks.
Network Connection Wizard
Allowed Users
You can specify which users can connect to this computer.
Select the check box next to the name of each user you want to allow to connect to this computer. Note that other factors, such as a disabled user account, may affect a user's ability to connect.
Users allowed to connect:
Administrator

4.10.User Setup

- Add: Authorized users can add additional users.

- Access Mode
  - *Admin:* Administrators have full access to the entire system.
  - *Users:* Users have partial access to the system (defined by an Admin).
  - *Auto Pass:* If you check this box, the system will assume that whoever logged into the system first is the current user, and will grant access based on their level. Note: The system may not require passwords in this case. Also, if you choose this function, the DVR must be restarted to begin the function
  - *Access Level:* When "Users" is selected, this category highlights. You can then define accessibilities for a specified user.

.

- Plugin Level
  - *POS System*
  - *LPR Setup*

- Access camera

- Information

  - *Account:* User ID (used when a user logs on to the system)
  - *Password:* Password (used when a user logs on to the system)
  - *Default account when window startup:*
  - *Detail Information: Name, Alas, Phone, E-Mail, Address*
- Delete: Select this option to delete an account that has already been defined.

- Update: Select this option to modify an account that has already been defined.

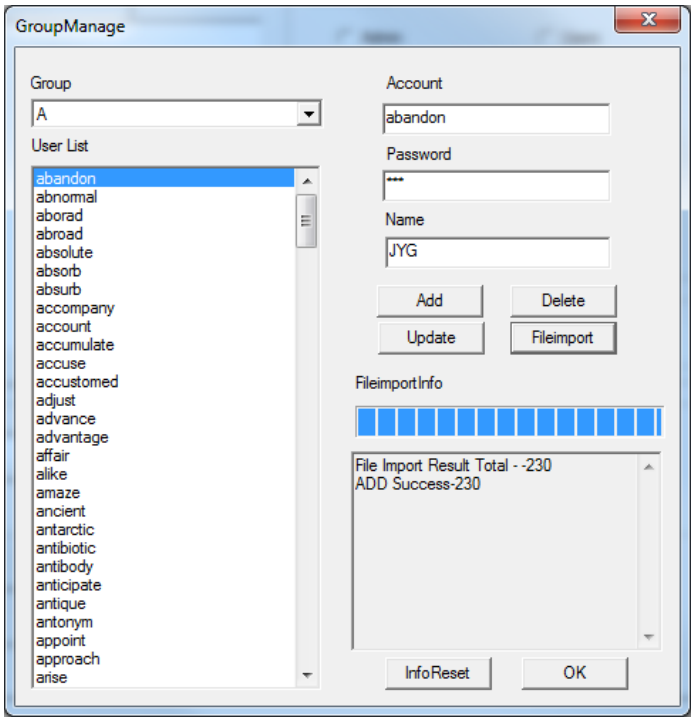
- GroupUser

  - - User
  - - Group

- Group - The group ID could not log in for the connection.

- Add - To create new group. Each group will have different rights for the access and all users in the same group will have same rights which are allocated for the group. There would be no need to input a detailed information and password. The add and delete of the group will be done by " GroupManage".

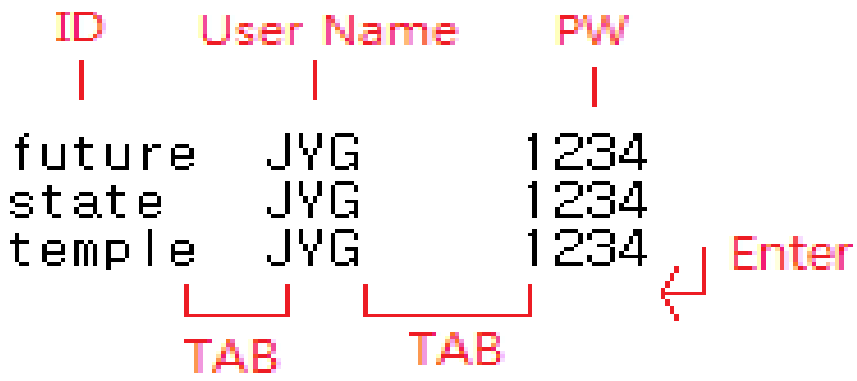
- Delete - To delete a group and all users together.
- Update - If you change s the right of the group, all users of the group will be changed and followed.
- GroupManager
    - Able to add, delete each user for each group. Admin only will have a right to access the Groupmanager.



- Group - Show registerd groupst.
- User List - Show all users registerd in each group.
- Add - Input Account, Password of new user and click “ Add”.
- Delete - To delete a user from User List.
- Update - Able to change the pw of the user.
- FileImport - it is able to register all new users using TXT file into the selected group.
- FileimportInfo - Show processing of the file import.
- InfoReset - To remove the information of the window for “FileimportInfo”.
- OK - Close Groupmanager.

- Fileimportinfo
    - exist account - Already existed the user.
    - Invalid data - coming incorrect data.
    - File Import Result Total - total number of users by TXT file.
    - ADD Success - number of registered users.
    - ADD Fail - number of no registration.
    - Invalid data - number of incorrect data for user list It would not be registered.

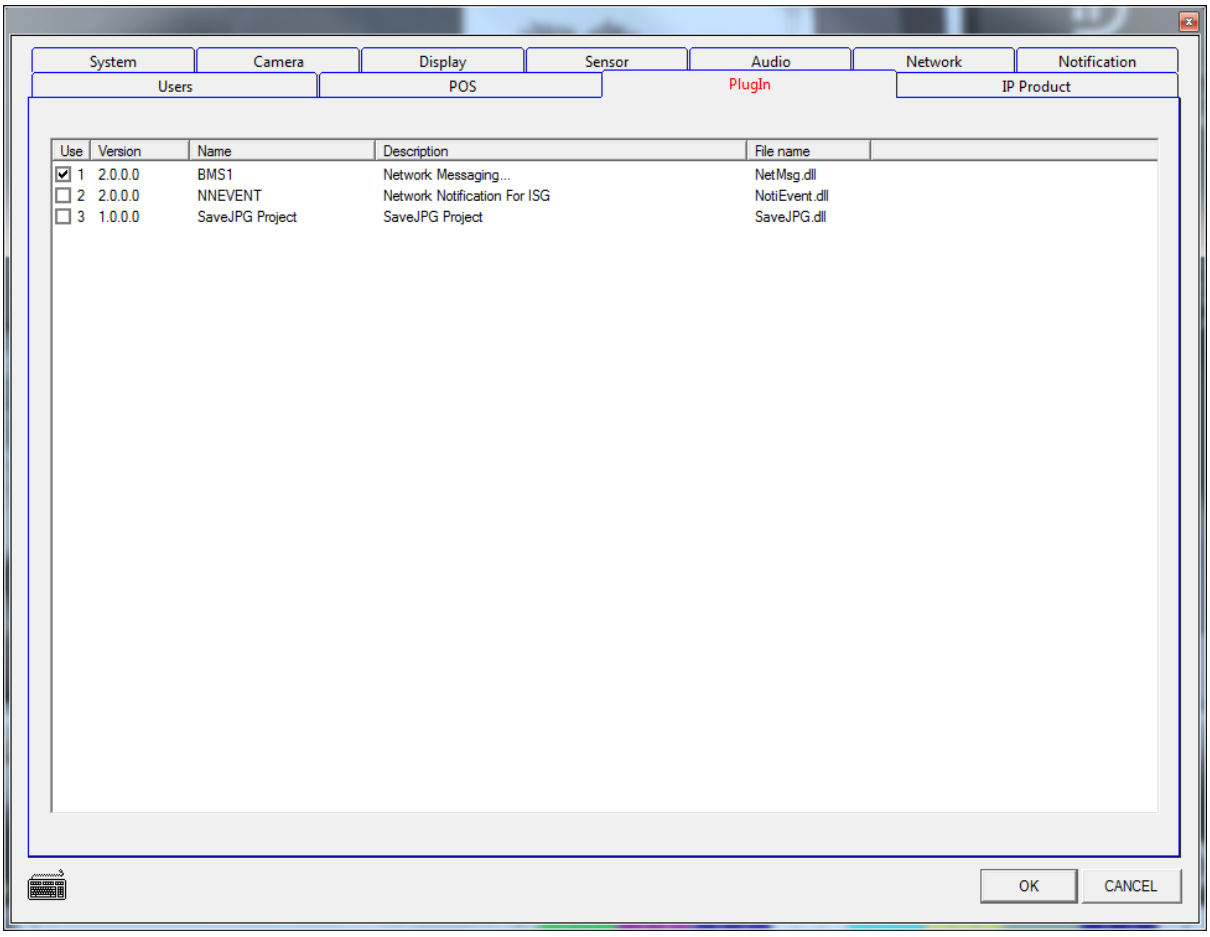
- How to make the TXY file to be imported.



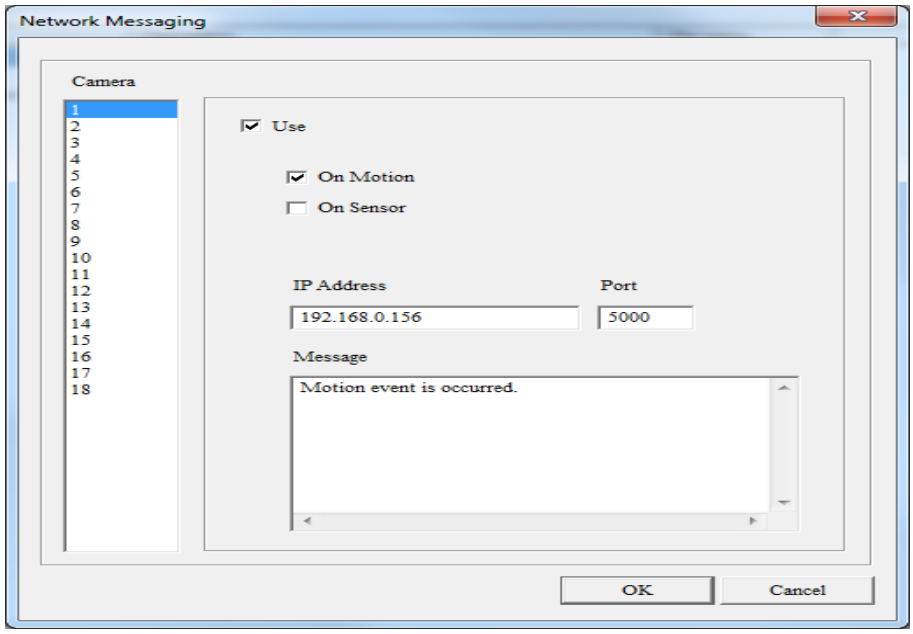
- The necessary information are ID, PW, User Name for user list (txt file).

4.11.Plugin Setup

This is User SDK for integration into other software packages, such as access control.

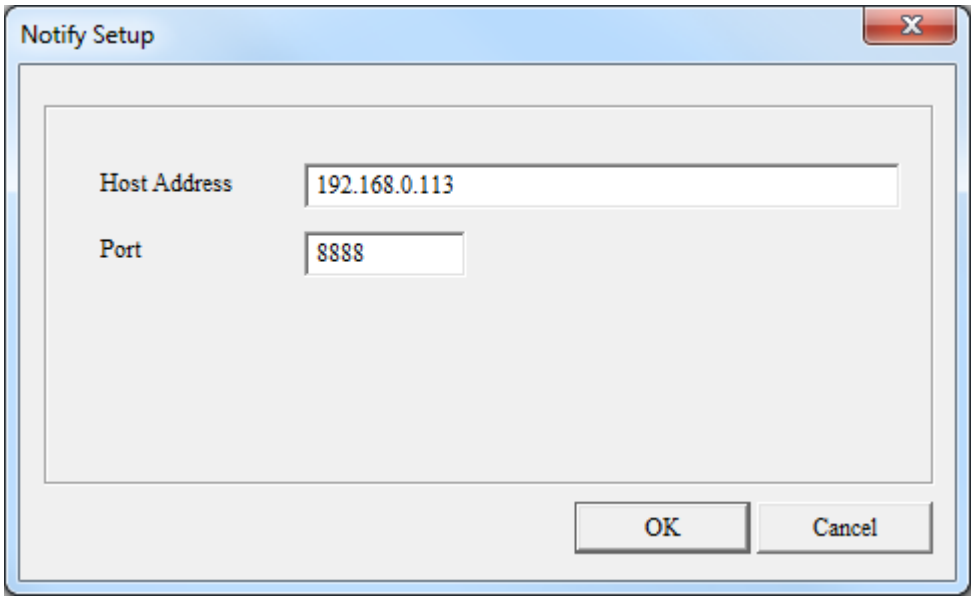


- BMS1: When motion or sensor event is detected, it will send a message to particular Server. You can edit source code of NetMsg.dll. We support the NetMsg SDK.



  - *Camera:* Camera no
  - *Use:* If you want to send a message, check “Use”
  - *On Motion:* Motion Event
  - *On Sensor:* Sensor Event
  - *IP Address:* Enter the IP address of the specific server to notify.
  - *Port:* Enter the Port of the Server.
  - *Message:* Enter the message you want to send.

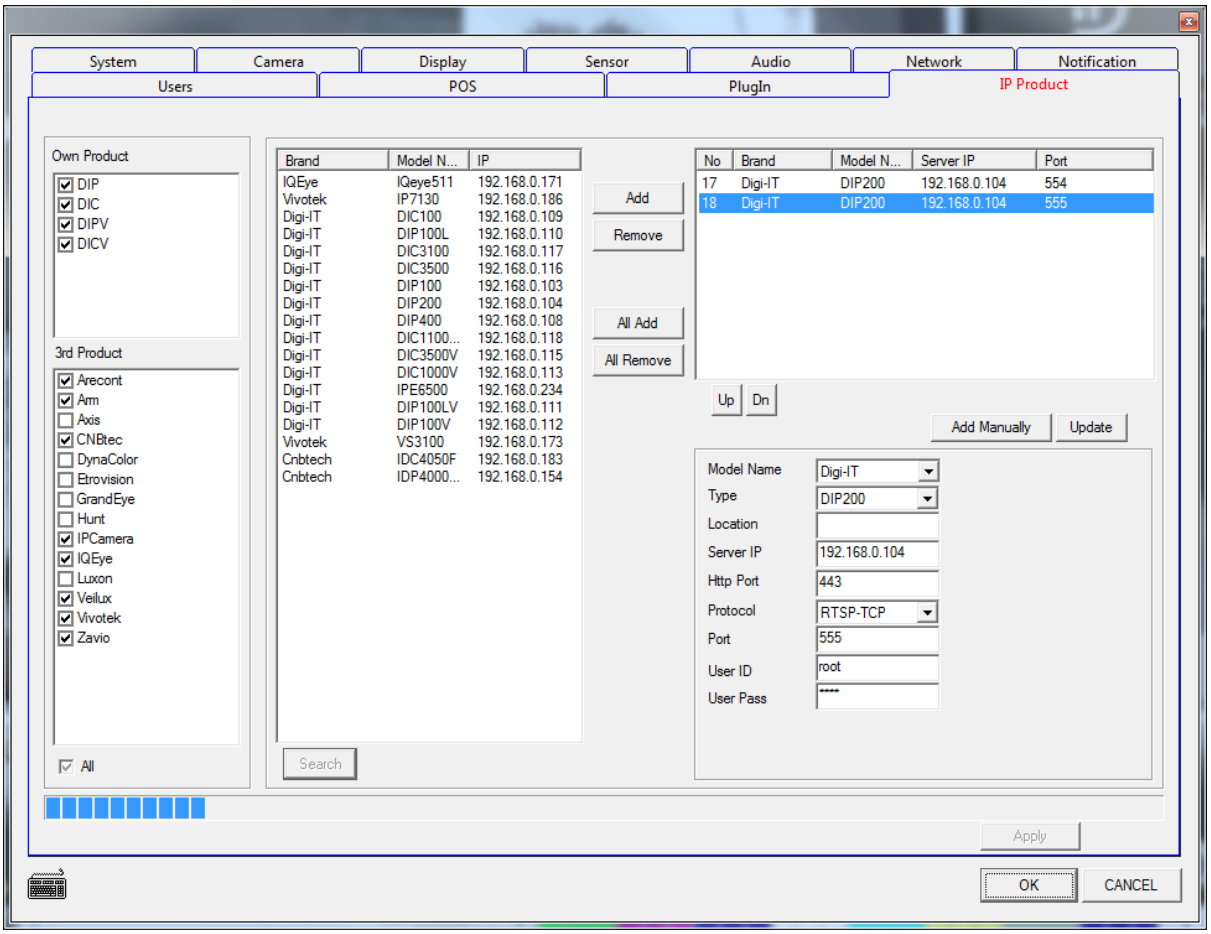
- NNEvent: Send a jpg image to particular Server. You can edit source code of NotiEvent.dll. We support the NotiEvent SDK.



- *Host Address:* IP address of particular Server
- *Port:* Port of particular Server

- SaveJPG: The user can get current jpg image from each camera using an application programmed through httptsvr.exe. You can edit source code of SaveJpg.dll. We support the SaveJPG SDK.

4.12. IP Setup



- Type of IP Product List: Please the brand that you want to use the IP cameras so that the search will be faster.
  Note: 3 rd Product will be required a License Key

- Search: IP Product scans IP Products immediately when click ‘Search’ button.

- Add: If a user wants to use DIP400, select DIP 400 item on the second list and click “Add” button.

- Remove: If a user wants to cancel usage of IP products to be added, after selecting DIP400 item on the third list, click “Remove” button.

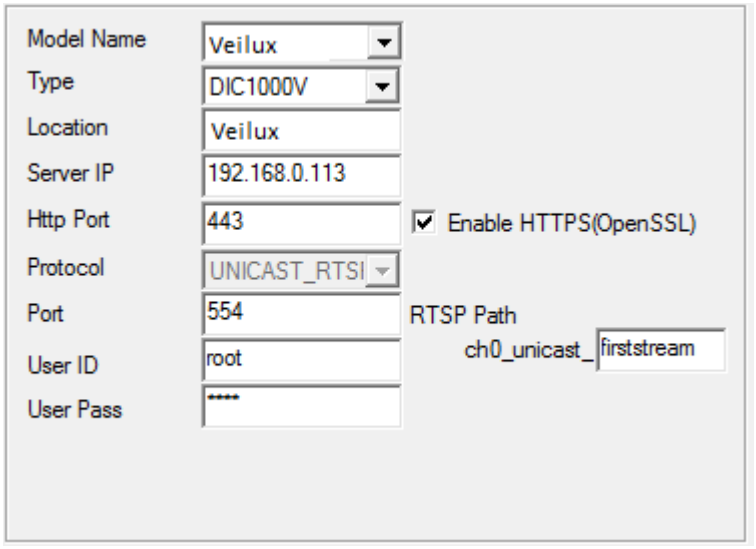
- UP/Down: Adjust channel number of each camera. But can’t mix Own Products group and 3rd party Products.

- Add manually: If can’t find IP Products automatically, a user must add it manually. First check item on the first list.

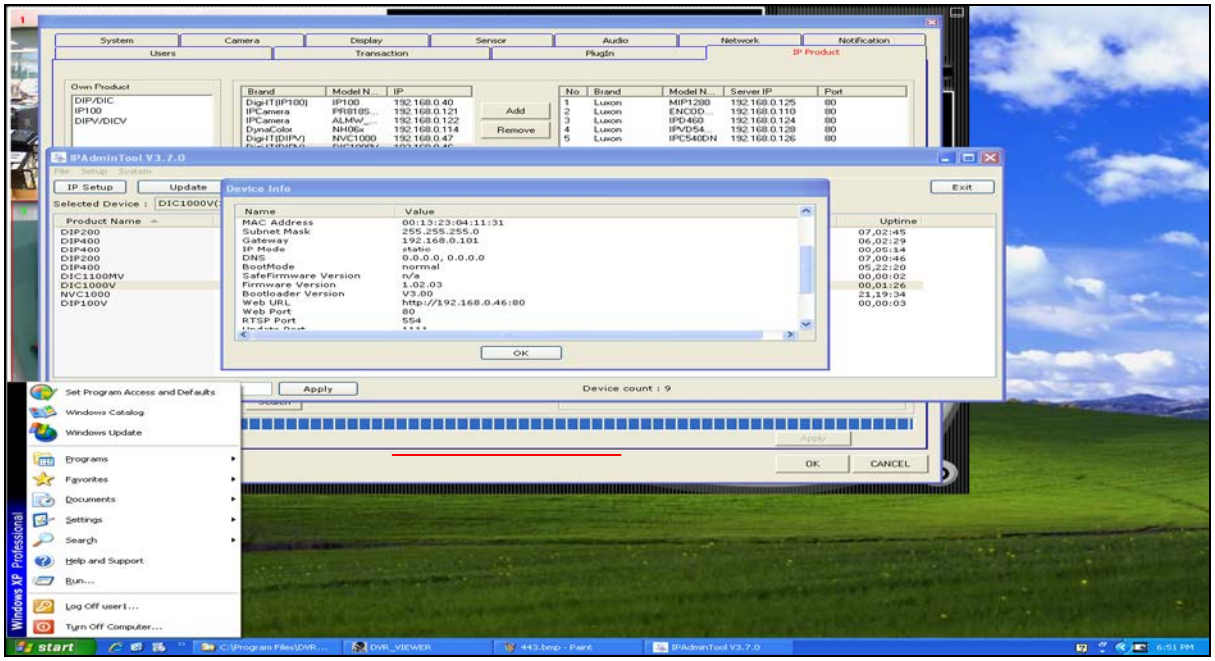
- Update: If you want to change location, Protocol, User ID, User Pass, enter the new value of item and click “Update” button.

- Apply: If you want to save the change of the Camera Setting for IP product , click ”Apply” button or ”OK” button.

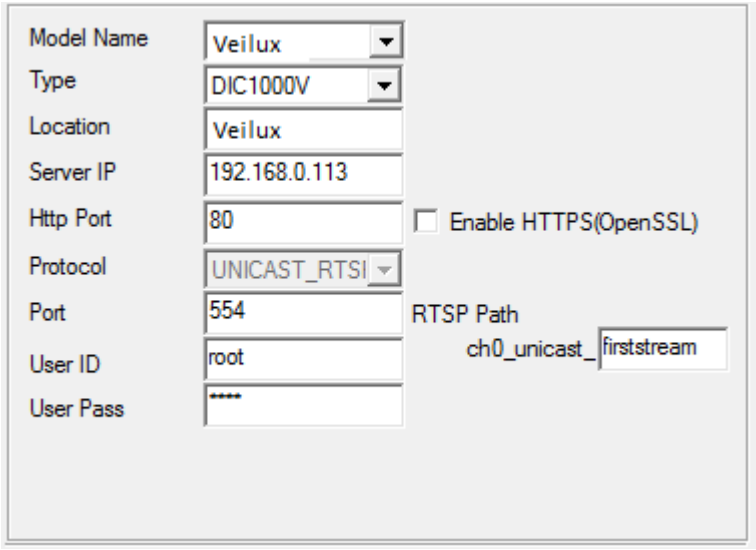
Product	User ID	Used Pass	Protocol	Port
DIP/DIC series	root	pass	TCP/UDP	554~557
IP100	admin	pass		2000
Vivotek(IP61x4)	root	root	UDP	
Vivotek(VS3100)	root	root	TCP	
Arm	root	root		9000/9201(pima port)/1(channel)
Axis	root	root(or 'pass')	HTTP	80
	root	root(or 'pass')	RTSP	554/30000(rtp port)
Arecont				80
ACTi	Admin	123456		6000/6001/6002 5000/80/7070/5000/5002 6005/6006/228.5.6.1/0(channel)
IPCameraA/B	root	root		9000/9201(pima port)/1(channel)
IQeye	root	system	HTTP	80
Luxon	admin	admin	HTTP	80
Grandeye	admin	admin	HTTP	80
Veilux	Admin	Admin	HTTP/ RTSP	80/554
Zavio	admin	admin	HTTP	80/8070(MJPEG)/8090(MPEG4)
ZavioD	admin	admin	HTTP	80/8070(MJPEG)/8090(MPEG4)
DynaColor	Admin	1234	HTTP	80
Etrovision	root	pass		1852/80
Cnbtec	root	admin	HTTP	80
DIPV/DICV	root	pass	HTTP/HTTPS	80/443
360Vision	username	password	HTTP	80
Cellinx	root	pass		1852/80
Icantek	Admin	Admin	HTTP/RTSP	80/554



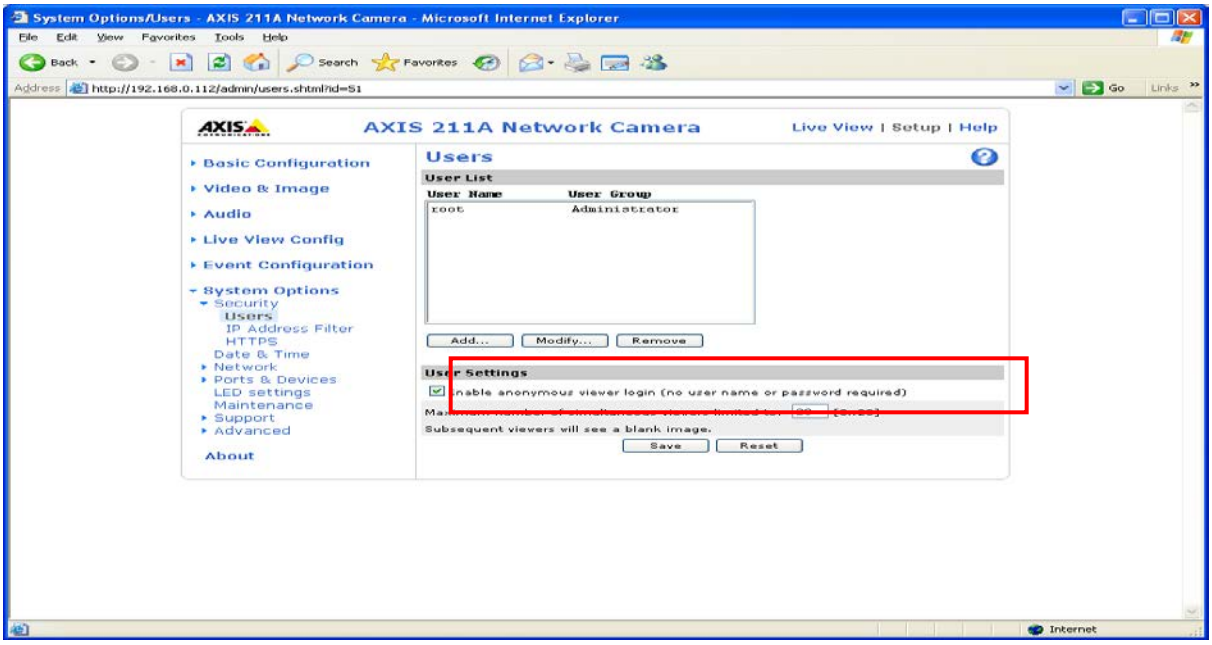
✧ How to check your device is whether http(80) or https(443), double click IP on second list. Click "Device info" on IPAdminTool, you can see Web URL http://192.168.0.46:80 or "https://192.168.0.46:443)



But if your device (DIPV/DICV) is set 80 port, you have to change Http port from 443 to 80. Just uncheck Enable HTTPS, and click “Update” button.



- How to get video of Axis.
  - When a user wants to change IP of AXIS, double click item of the second List. Information of the Item will be displayed as follows



- Enter System Options -> Users -> User Settings

Note: Check “Enable anonymous viewer login” (no user name or password required)

5. Playback

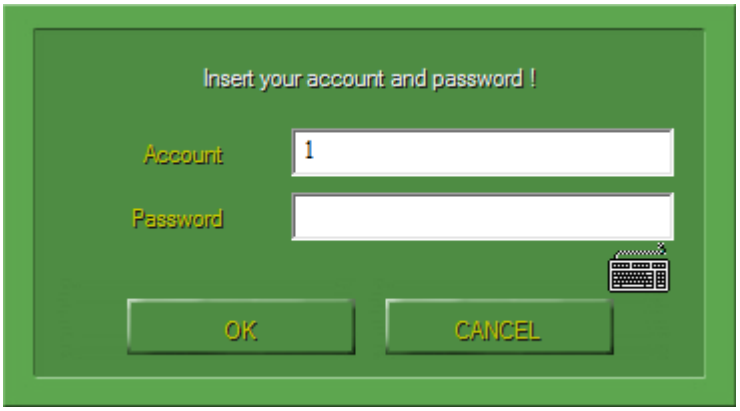
5.1. Start Application

From the Windows Desktop, double click the DVR Search icon, or run the Search.exe program in C:\Program Files\DVR\Main folder

5.1.1. Logon to the Playback

When you start the DVR Search (search.exe) program, the program will ask for your “Account” and “Password.” The system’s Default Account is “1”, and the Password is left blank. After entering the account, click “OK” button to start the DVR Search.

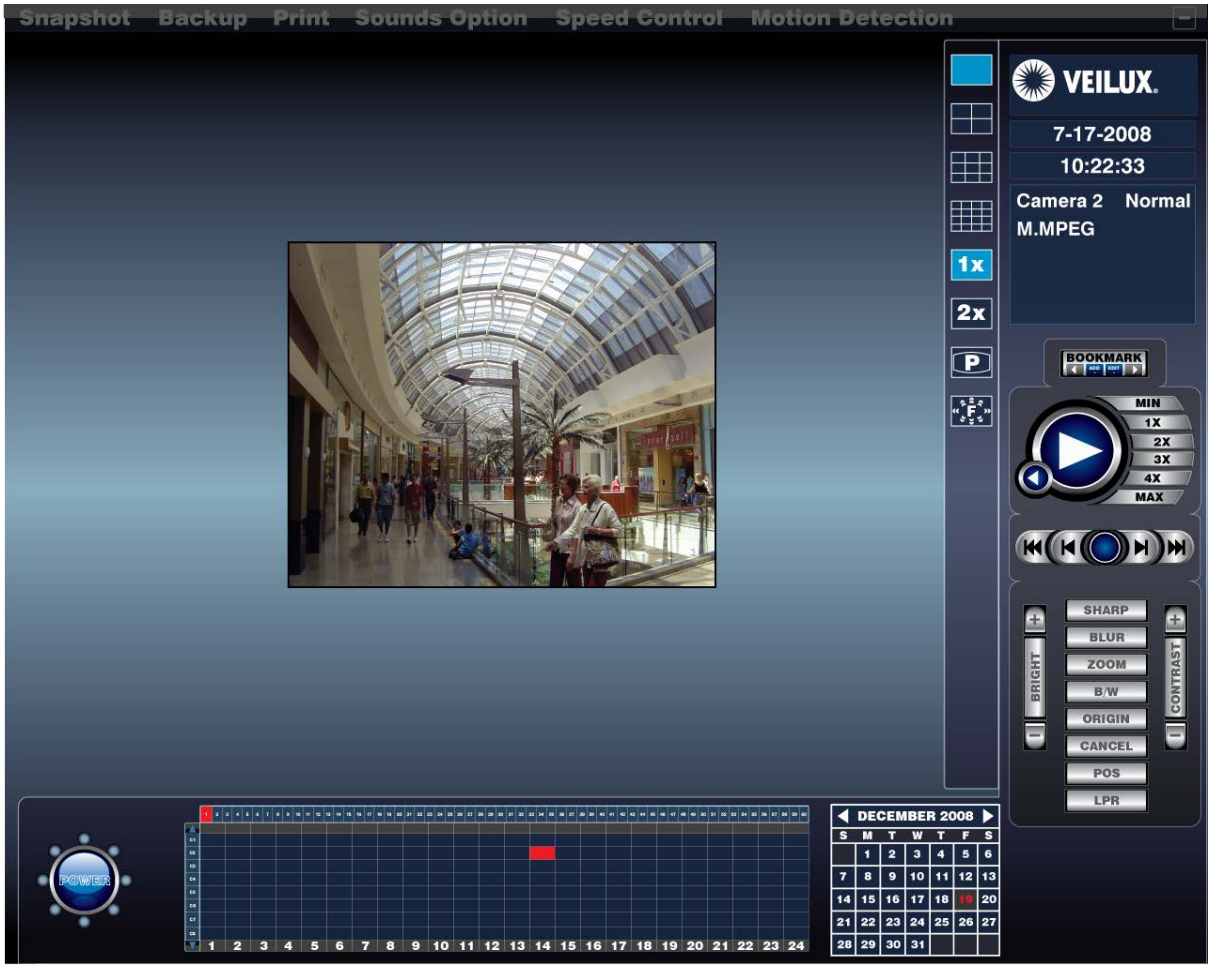
To playback the recorded video, execute the search program (at the bottom of the main screen).



Note: Instead of using the keyboard, you can logon using only with mouse. Simply click the keyboard button (which is right below the password field), and the system will show the keyboard. A keyboard will come up as shown below; simply use click on the keys the same as typing on the keyboard. Either method will work.

ESC F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
` 1 2 3 4 5 6 7 8 9 0 - = BKSP
Tab q w e r t y u i o p [ ] \
Caps a s d f g h j k l ; ' Enter
Shift z x c v b n m , . / Shift
Ctrl Alt Space Alt Ctrl Ins Del

When the Search program starts, the video screen will be displayed as follows.



5.2. Functions

5.2.1. Screen Mode Icons

5.2.2. Screen Mode Buttons

- Single-Screen-Mode: Display the recorded video from one camera,
- Multi-Screen-Mode: Display 4 the recorded video from 4 different cameras
- Multi-Screen-Mode: Display 9 the recorded video from 9 different cameras
- Multi-Screen-Mode: Display 16 the recorded video from 16 different cameras
- Regular-Size-Mode: Recorded video will be displayed the same size as the captured image.

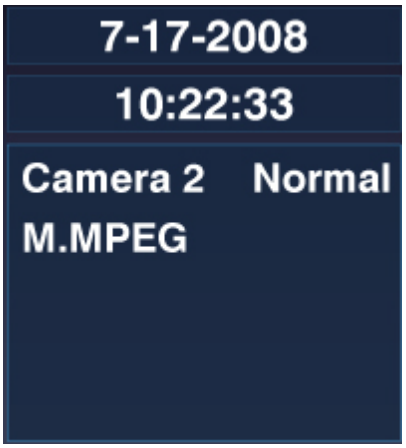
-

Double-Size-Mode: Recorded video will be displayed 2 times larger than the captured image.
-

Panorama-Mode: Views sequential still images from one camera.

5.2.3. Status Information Window

This window will show the status of displayed video and captured time information.



- Date and Time information of the captured image.
- Camera Number.
- Recording mode used.
- Type of Image compression used.

5.2.4. Calendar Window

The calendar represents the dates when video is recorded. If the color of a date is RED, there has been video recorded on that date, otherwise the dates will be black if there is not recorded data.

When you click on a specific date, the Record Table (Section 4.1.7) will show what data has been recorded that day.

- Month and Year
- Left Arrow: To move to the previous month, click this button.
- Right Arrow: To move to the next month, click this button.

5.2.5. Image Control Menu

You can modify the captured images using these controls.

- SHARP: Control the sharpness of the captured image.
- BLUR: Control the blur of the captured image
- ZOOM: Zoom into a specific area of the captured image. If you select a specific area of the image, the selected area will be maximized in the window. If no select, the image will be enlarged each 10% per clicking based on the center.
- B / W: Convert the image to black & white
- ORIGN: Go back to the original image
- CANCEL: Cancel previous commands one by one
- BRIGHT: Control brightness -/+
- CONTRAST: Control contrast -/+

5.2.6. Utility Menu

6.
7. Control the speed of the displayed image.
8.
9.

5.2.6. Play Menu

The controls select forward, backward, play and stop.

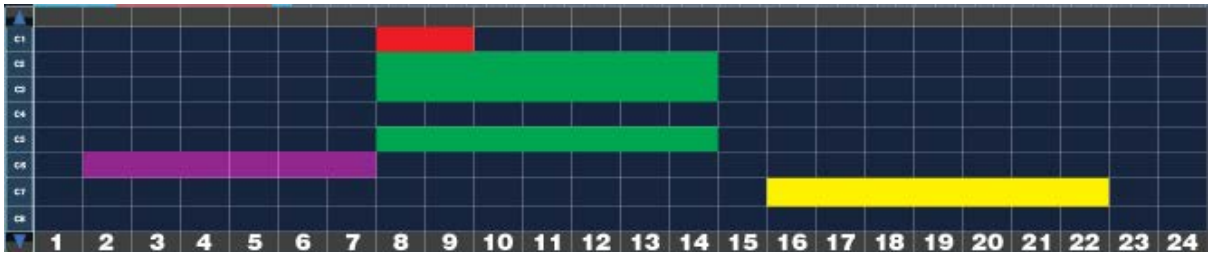
- The first image
- Backward one image frame:
- Stop
- Forward one image frame
- The last Image
- Backward Play
- Forward Play
- Speed Bar

1
2
3
4
5
6

1) Min Speed, 2) 1/2x Speed, 3) 1x Speed, 4) 2x Speed, 5) 4x Speed, 6) Max (skips frames)

5.2.7. Record Table(Hour Bar)

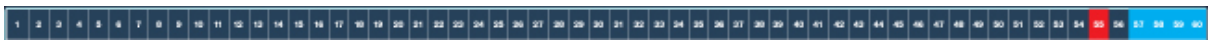
When you select a Date from the Calendar, system will show the recording information below the video screen.



- Camera: C1, C2, etc. represent the camera number chosen.
- Time Cell: Show time zone for 24 hours (00 to 24)
- The color of the cell represents the type of recording that the system made. Darker versions of each color mean that audio was recording during that time.

5.2.8. Record Table(Minutes Bar)

When you select a time from the Record table, the system will show the minutes of that hour (0 to 60).



5.2.9. Exit Button

-

Select this to exit from the playback screen.

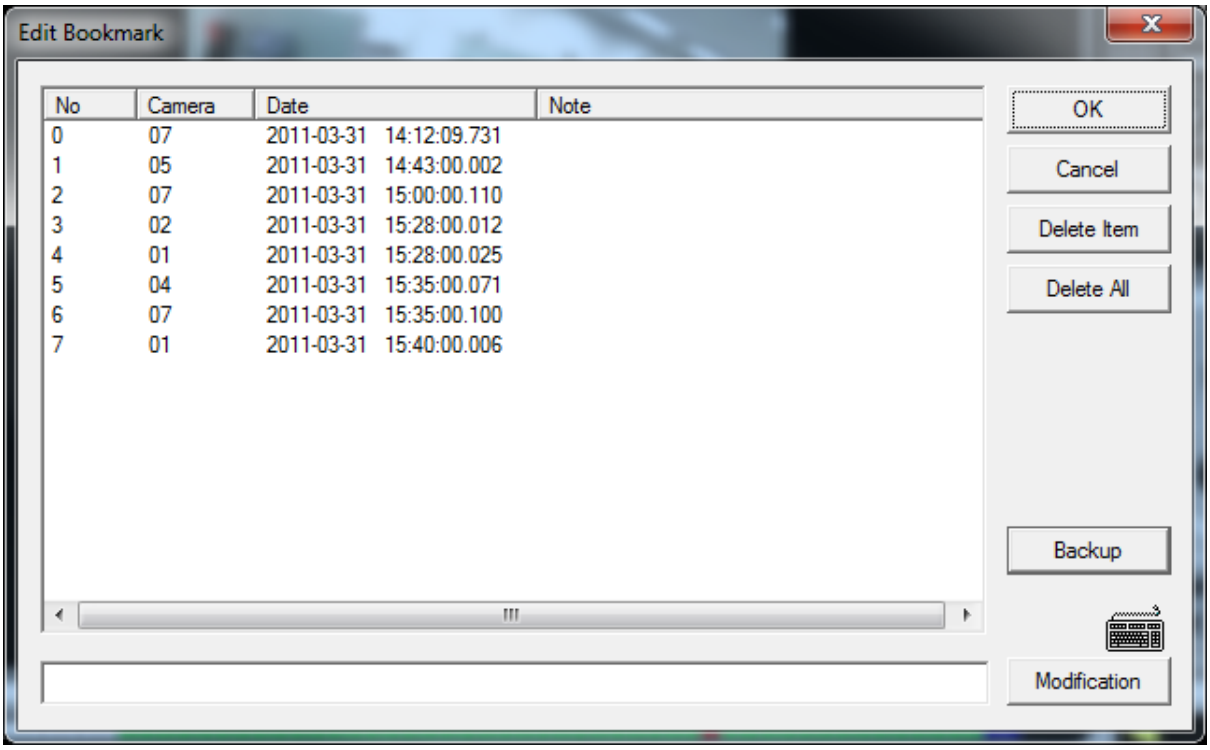
5.2.10. Bookmark Button

You can make a bookmark of selected images for reference or review later. This does not save the data and the video drops off in the normal course of recording if not saved.

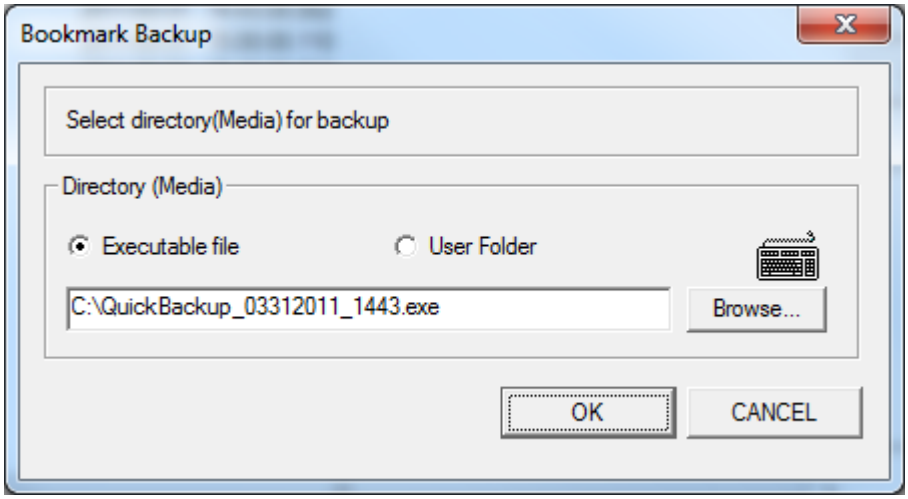
- Review previous bookmarked images.
- Review next bookmarked images.
-

Make a bookmark for an image on the playback screen.
-

List the current active bookmarks. The following screen will appear:



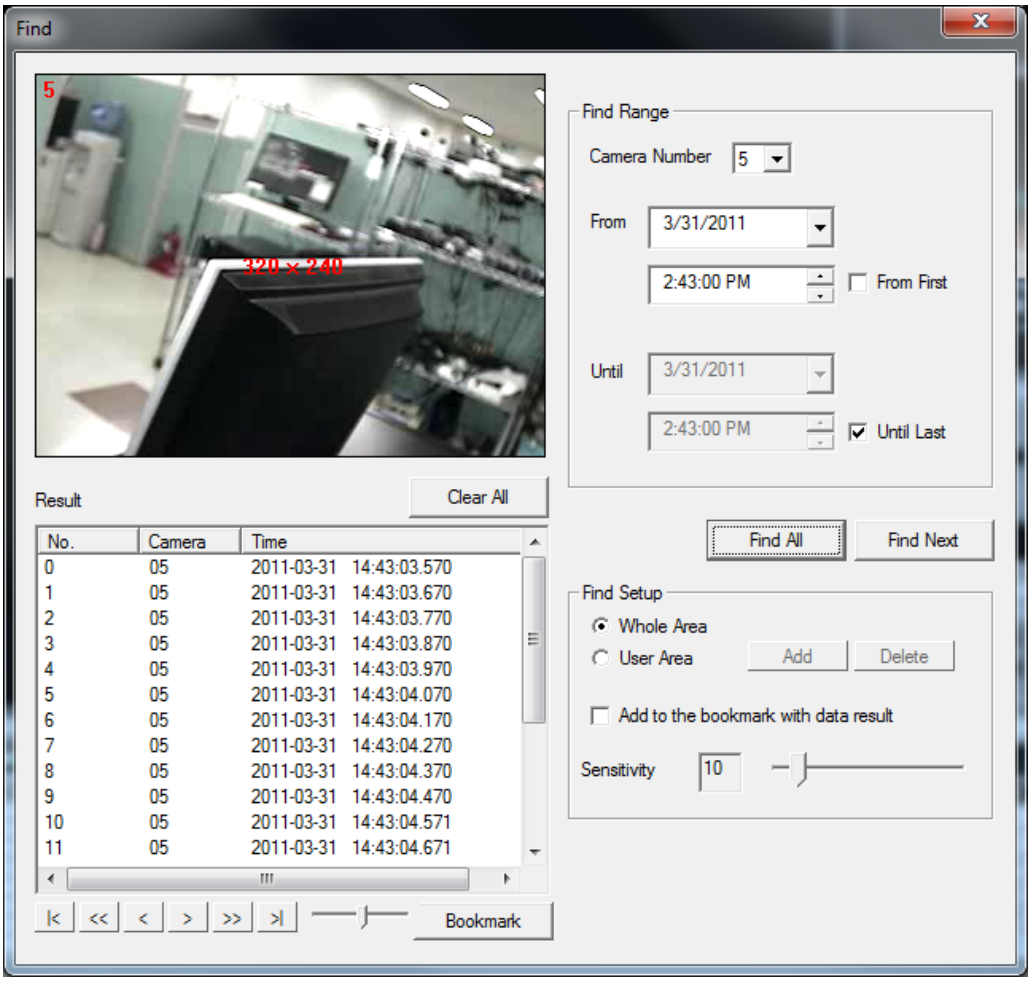
- OK: Select and view an active bookmark.
- Cancel: Cancel the list of bookmark.
- Delete Item: Delete selected item.
- Delete All: Delete all items.
- Backup: Save a copy of the selected bookmark.
- Modification: Add a note for the selected item.



- Directory (Media): Files will be saved to this folder. (default = CD/DVD Drive)

5.2.11. Motion (Object) Search

You can set a section of video for motion detection based on existing recorded data, and search for data within that area (object search).

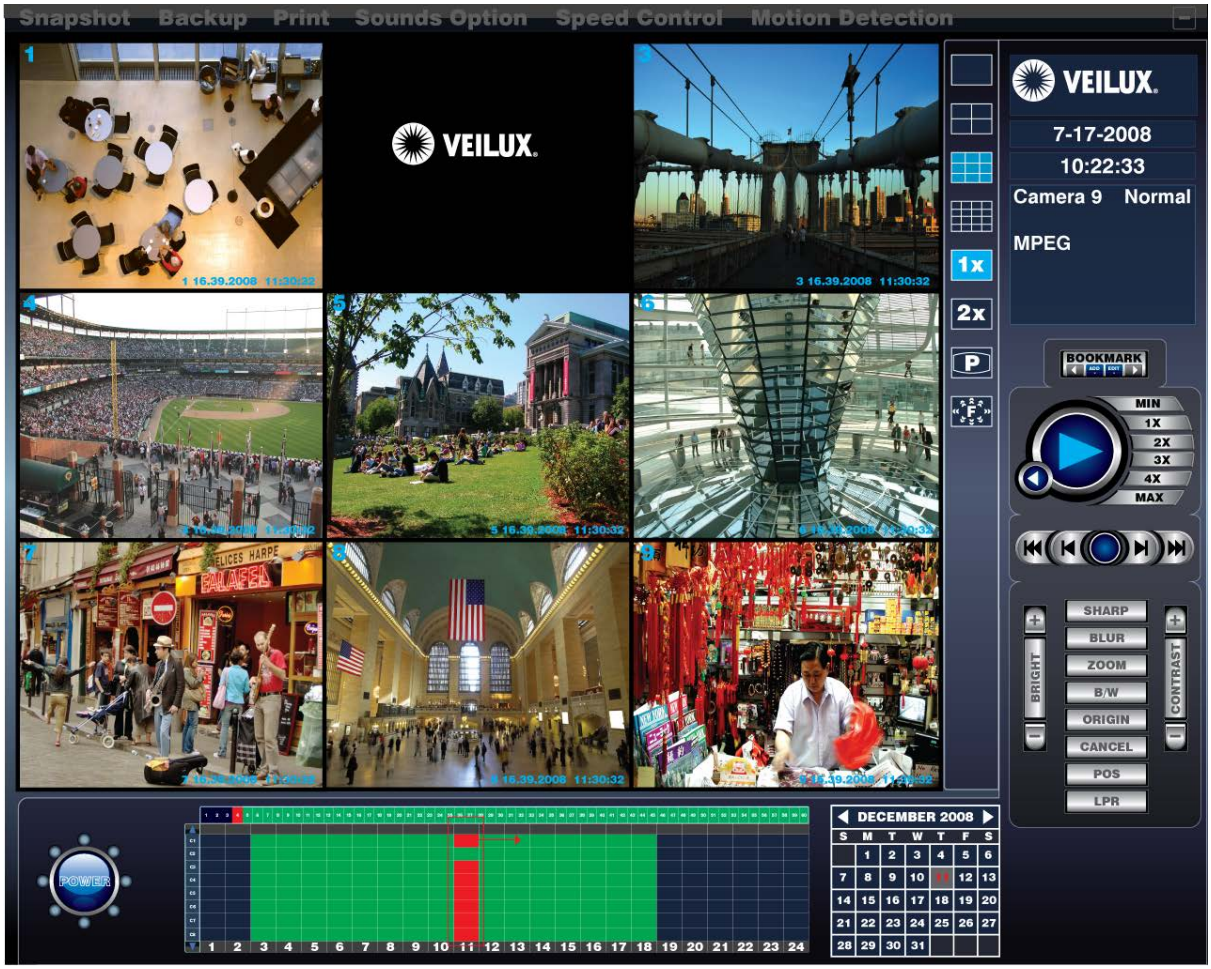


- Find Range
  - Camera Number: Select camera number.
  - From: Starting time.
  - Until: Finishing time.
  - From First: Select from the first minute of recorded data that day.
  - Until Last: Select to the last minute of recorded data that day.

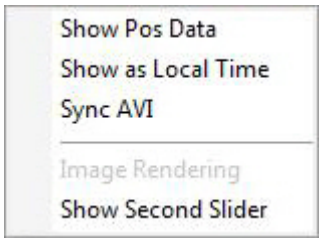
- Find Setup
  - Whole Area Mode: Motion will be searched in the whole area.
  - User Area Mode: Motion will be searched in the area you define.
  - Add: Use this to define an area for searching. Click the “Add” button, and then drag an outlined square around the area you want to search. More than one area can be defined.
  - Delete: Used to delete defined areas that you do not want.
  - Add to the bookmark with result data: Check this box to store the images as bookmarks, automatically.
  - Sensitivity: Define the Rate of Sensitivity (the default value is 10%). A lower percentage is more sensitive.

- Find All: Find all image data during setting time.
- Find Next: Find image by image.
- Clear All: Clear bookmarks for all items.
- Bookmark: Make a bookmark for selected items.
- Search result
  - Move to first item.
  - Move to previous item.
  - Move to previous item in sequence.
  - Move to next item in sequence.
  - Move to next item.
  - Move to last item.
  - Adjust the speed.

5.2.12. Search Selected cameras only on playback

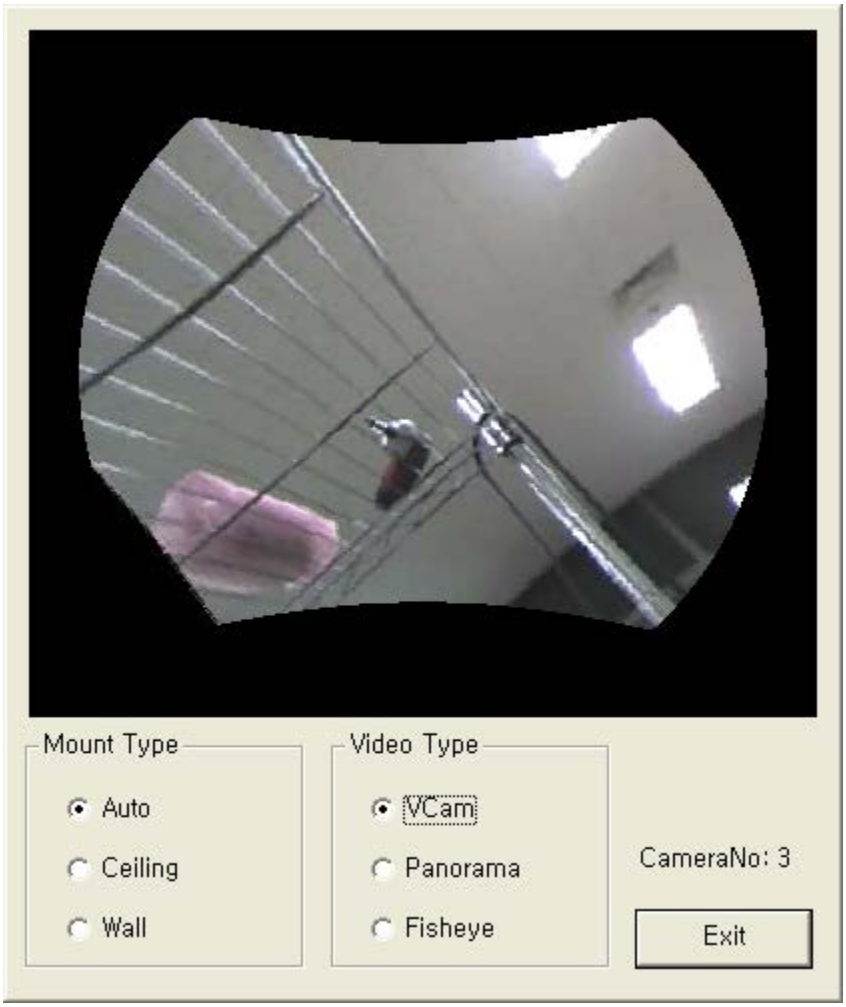


If you want to search certain cameras only, you can add or remove the cameras by right clicking in the time table. You can also drag cameras in the display screen to arrange them in any order.

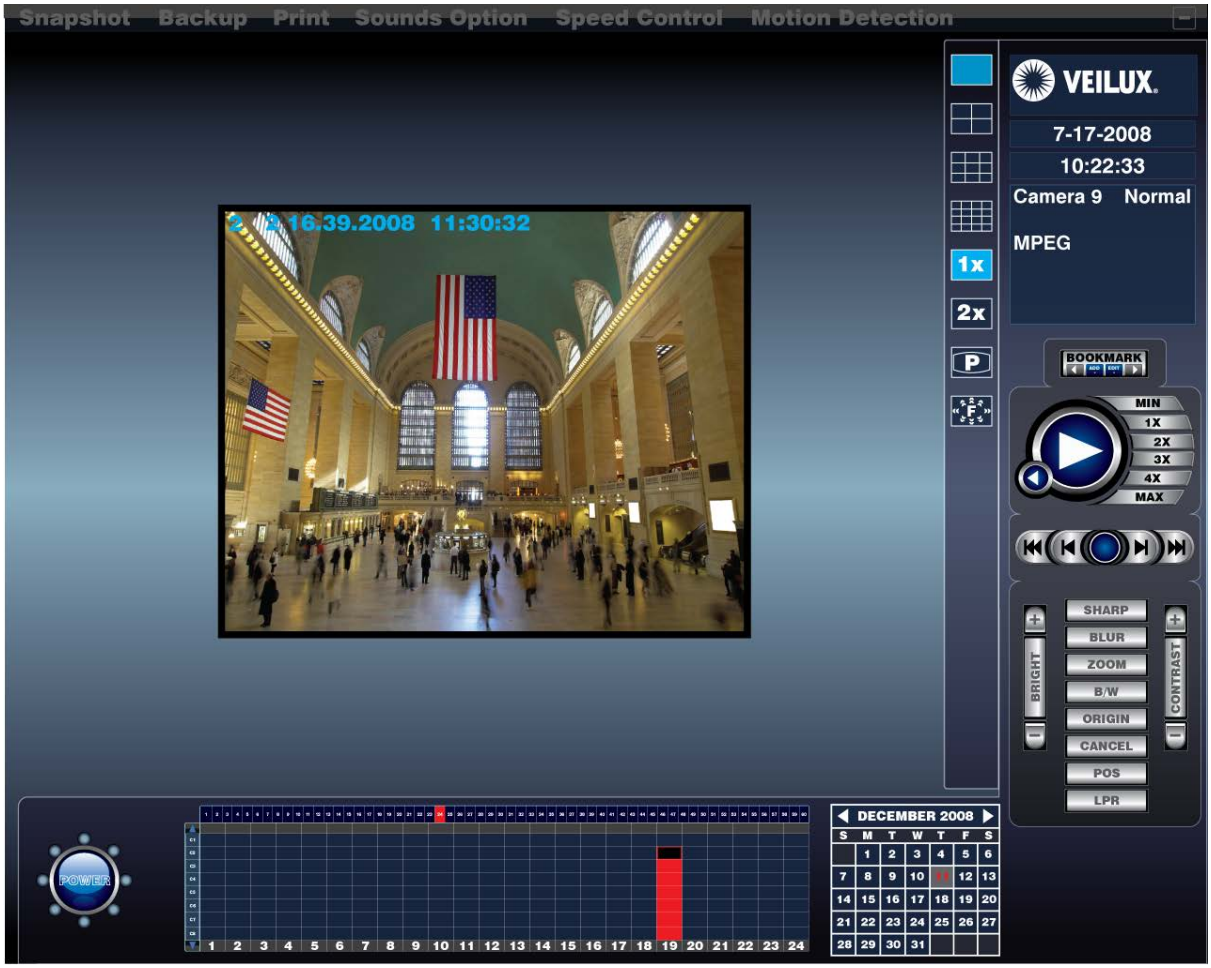


- Show Pos Data: If you want to see Video and Pos data embedded, check ”Show PosData”.
- Show as Local Time: If you want to search to get local time, check this function.
- Sync AVI: If you want to save image synchronize with time, check Sync AVI. This method has dump images to synchronize with time. So if you don’t want it, don’t check.
- Image Rendering: If you use Grandeye IPcamera, you can control this function. This function allows fisheye image to be rendered as VCams (Virtual camera) or panorama views. You can control the size of this dialog.
  - *Mount Type:* Auto, Ceiling, Wall
  - *Video Type*

- VCam: VCams can be retrospectively panned, tilted and zoomed in the same way as an ordinary motorized dome camera but do not suffer from the same limitations.
- Panorama: Panoramas are rendered as two 180 degree views.
- Fisheye: Fisheye views allow the camera images to be seen without geometric processing, but with the option to zoom and pan.
- CameraNo: Number of camera that you are searching.
- Backup: Save rendered image or backup specific video to AVI files as.



- Show Second Slider: If you want to search second image, check “Show Second Slider”. You can see slider bar above minute bar.
- You can control the size of this dialog.
- - Mount Type:
- Auto:
- Ceiling:
- Wall:
- - Video Type
- VCam: VCams can be retrospectively panned, tilted and zoomed in the same way as an
- Ordinary motorized dome camera but do not suffer from the same limitations.
- Panorama: Panoramas are rendered as two 180 degree views.
- Fisheye: Fisheye views allow the camera images to be seen without geometric processing,
- but with the option to zoom and pan.
- - CameraNo: Number of camera that you are searching.

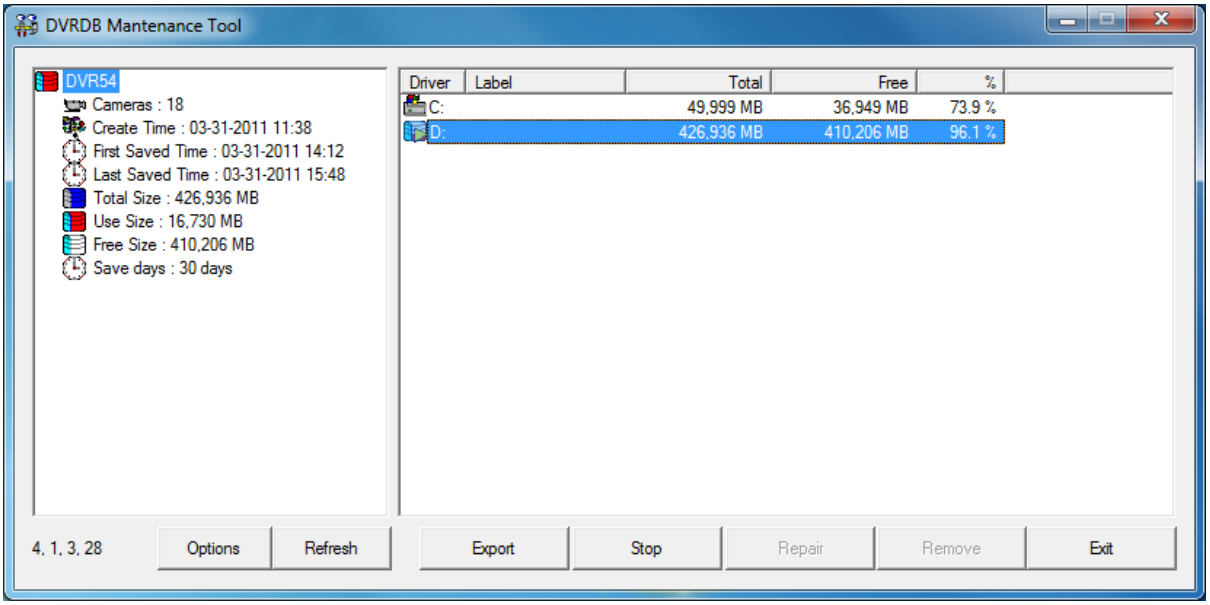


6. Playback (Using Removable HDD)

In some cases, you may want to remove the original hard drive and play it back in another PC (sometimes the courts may require the original drive as evidence).

6.1 Export Data (DVR Side)

Run the FsUtil.exe utility: (Start->Programs->DVR->Main->File Manager) and click “Export”.



Moving POS Data: If you have to move POS data, set the POS save Directory on the Removable Hard disk. You can set the POS save Directory using setup Dialog(Setup->Transactions->Save Directory)

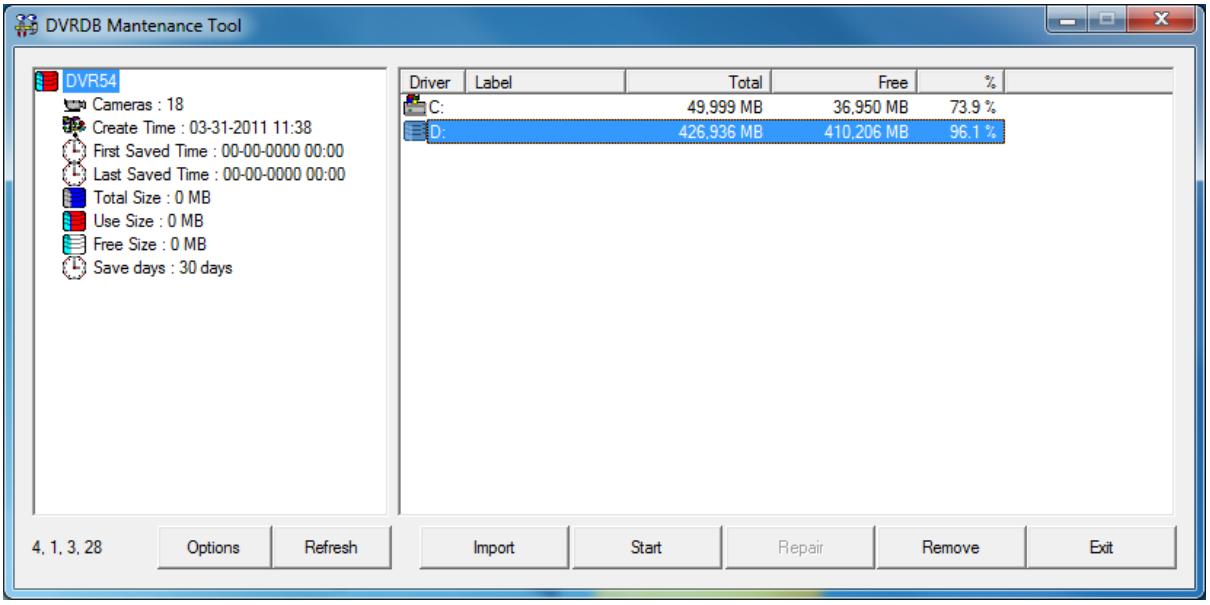
For Example if you set the video DB on the D:\ Drive, set the POS save Directory on D:\ Drive too. Then POS data is exported with video data, and you can search the POS data on third PC.

6.2. Import Data (3rd 3rd PC Side)

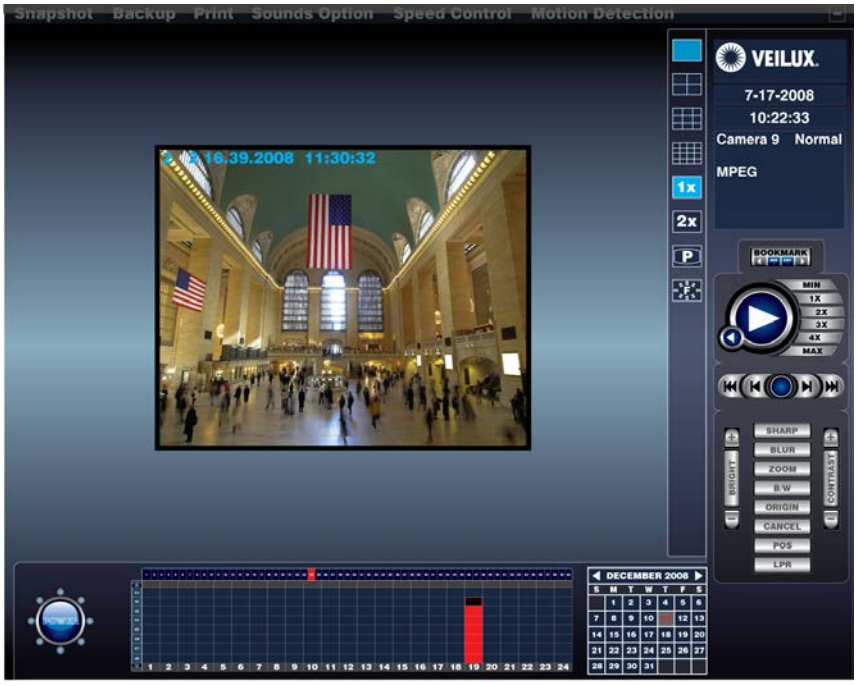
Install the Playback program from provided on the CD. (CD\Playback\DISK1\setup.exe)

Note: You need to install the imported hard drive in the 3rd PC first. Please follow the steps below to import a hard drive.

Run FsUtil.exe. (Start->Programs->Playback-> Main->File Manager) and click “Import”.

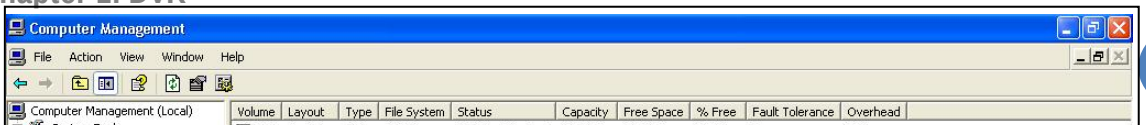


Run Search.exe (Start->Programs->Playback-> Main->Playback). You can now search the imported DB.



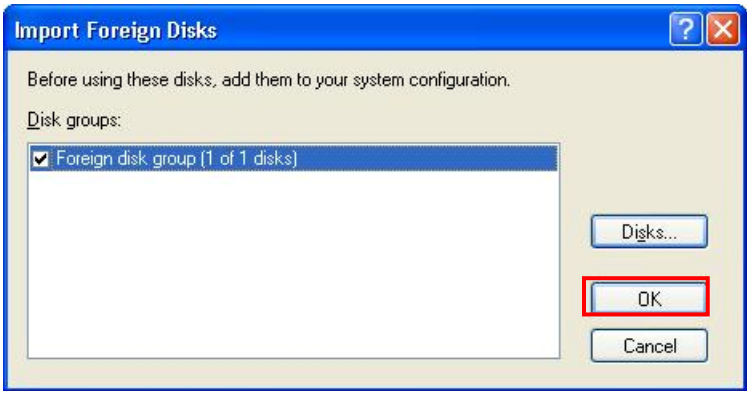
< Installation of An Imported Hard Drive>.

1) Right click on “My Computer”->Manage->Computer Management->Storage->Disk Management (select).

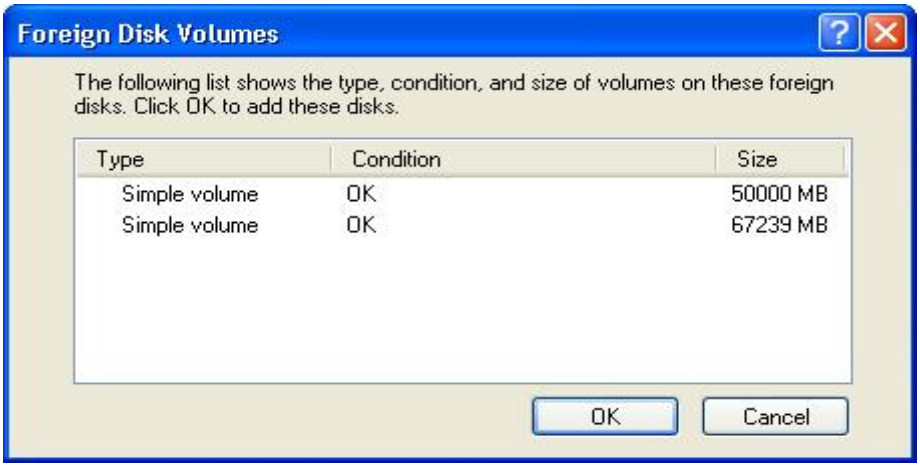


Place your mouse on the “Disk 1” as below and right click to choose ->Import Foreign Disks.

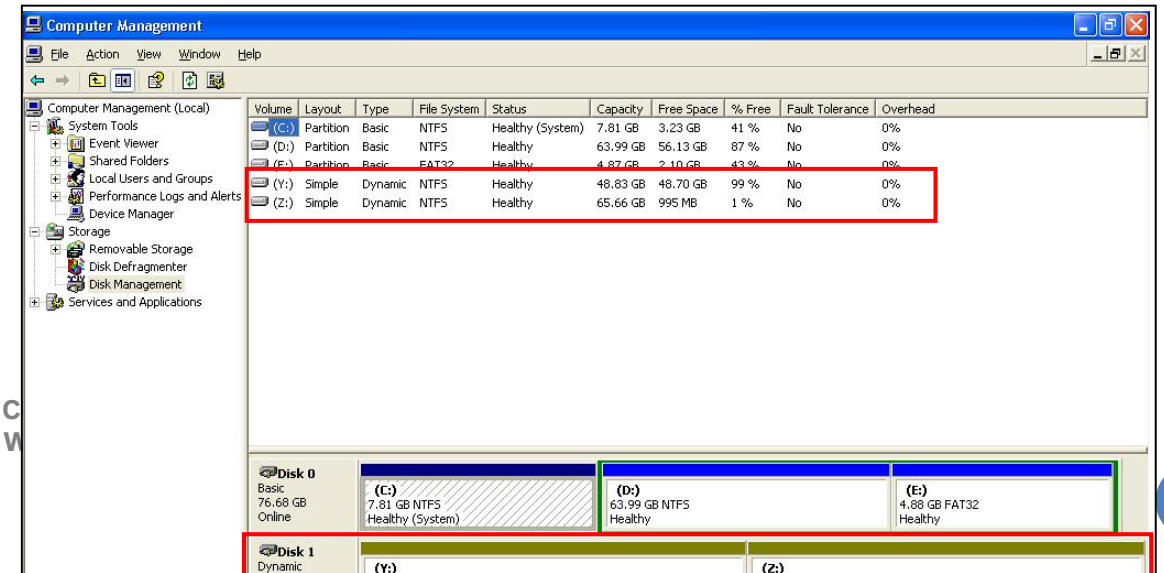
2) Select “Disk group” as below and click “OK”.



After checking the disk volumes information as below and click “OK”.



4) The hard drive is added into the system.



6.3. Import Data (3rd PC Side)-Using DVR Program

Execute the FSUtil.exe and import the removable disk.(See section 5.2 Import – Using Playback Program).

You can now playback exported video data using your PC.

If you want to playback POS data, set the POS save directory the same as the directory it was exported from. For example, If POS data exists on the D:\POSDATA, set that directory as POS save directory. You can set POS save directory using SETUP dialog. (Setup.exe->Transactions->Save Directory).

7. Remote Surveillance

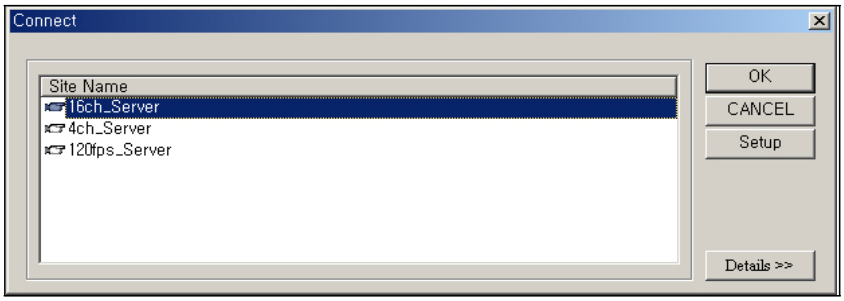
7.1. Start Remote Program (Single Mode)

To use the remote service from a remote site, install the “DVR Remote” program. Once installed, start the program from the Windows Desktop, or run the DVRHost.exe program in C:\Program Files\DVR\Remote folder.

7.2. Connect Main System

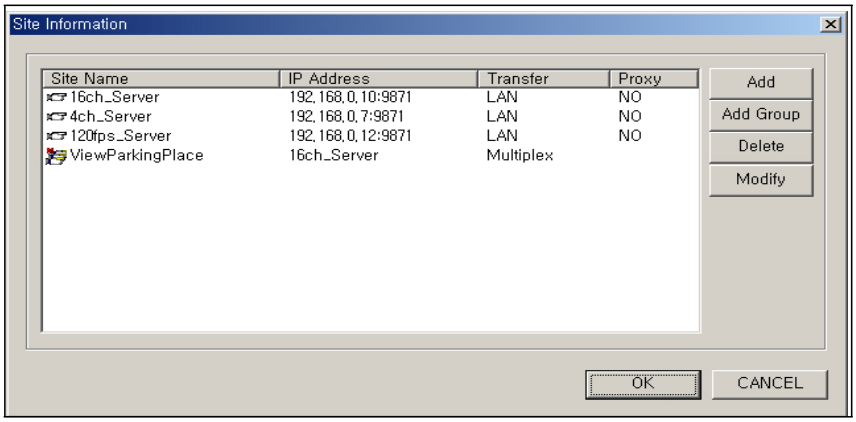
The first screen of DVR Remote program is nearly the same as the DVR Main screen. The Remote Screen also has the “CONNECT” and “DISCONNECT” buttons as follows:

Click the “Connect” button to display the connection dialog box with the list of established servers. From here, you can connect to the site of your choice. After selecting the Site, click “OK” to start the remote session. If this is the first time to using the Remote program, you will need to setup the Site first.

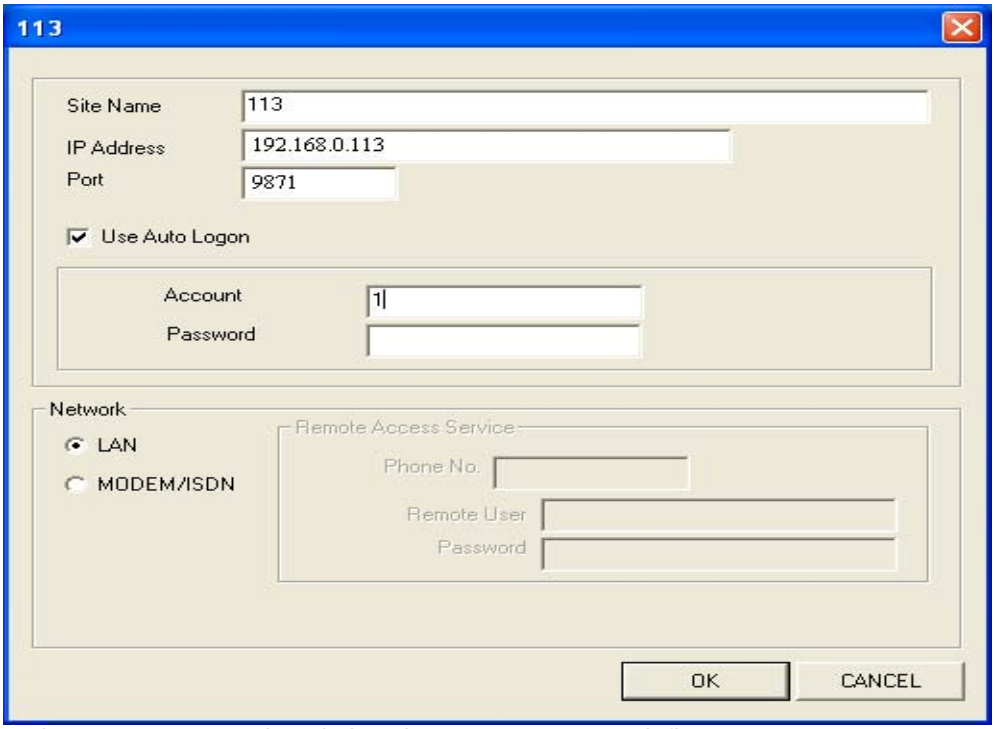


7.3. Setup Site

Click the “Setup” button from the Connect window, and the Site Information Window will be displayed as follows:



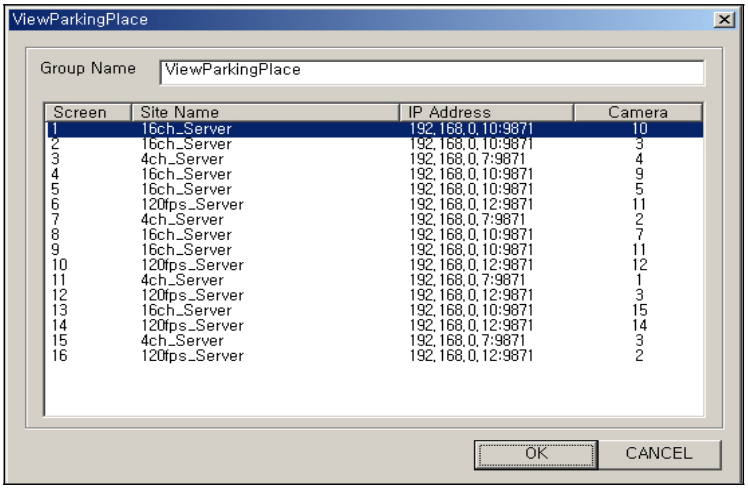
1) Click the “ADD” button, for the Site Information window:



- Site Name: Enter a descriptive site name – you can define any name you can recognize easily.
- IP Address: Enter the IP address of the site.
- Port: Enter TCP/IP Port number, the default port number is “9871” and typically does not need to be changed
- Use Auto Logon: You don’t need to logon every time you try to connect to DVR,
- Account: Enter a account of DVR you register.
- Password: Enter a password of DVR you register
- Network: If you use dial up modem, check “Modem, ISDN” and enter the phone number, Windows user ID and password for the DVR server.

2) Add Group

You can use the “Multi-Channel” connection to make a grouping of multiple servers and cameras that you want to connect to by the remote surveillance program. When you click “Add Group”, you will see following window and can make your own group from a list of available



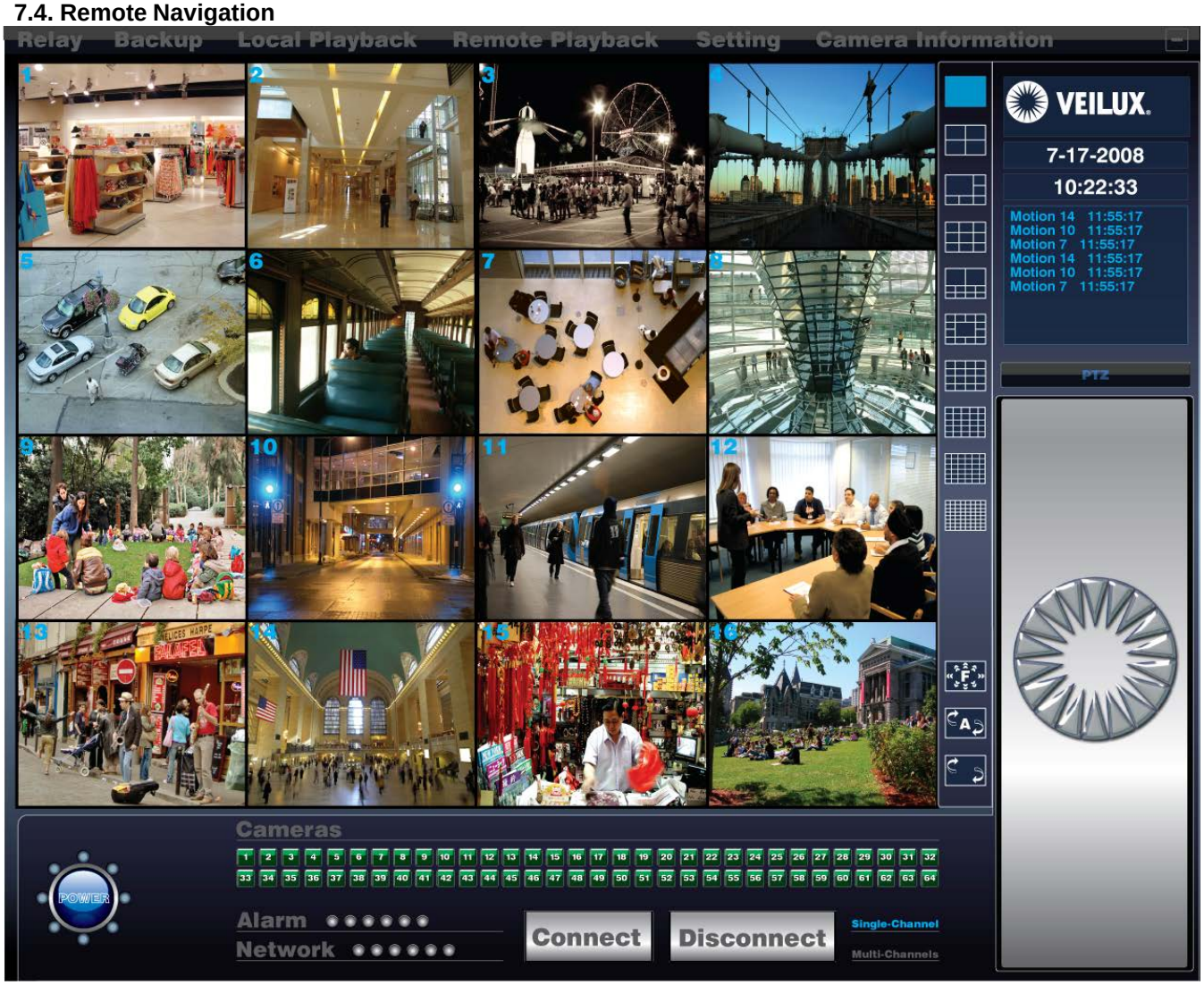
3) Delete

Click on any Site that you want to delete from the list, and then simply click the “Remove” button.

4) Modify

From the Site Information Window, Click any site from the list that you want to modify, and click the “Modify” button. You can then modify any information attributes in the window, except the Site Name. To change the Site Name, you must delete the site and re-add it with the correct name.

7.4. Remote Navigation



1) Action Buttons

R. PLAYBACK "Remote Playback": Used to search recorded will be displayed and operate the same as Main DVR's Playback Menu. **(Note the action button**

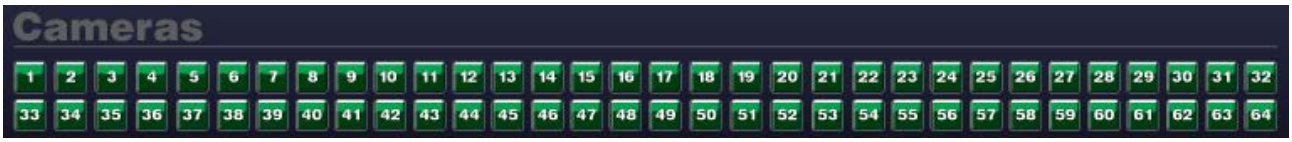
. If you click this icon during the remote search, the icon will change to green and the transmitting images will be recorded at your PC).

-

SETTING: Configure any of the system parameters on the DVR from the Remote system. By clicking the SETTING button, the Setting Menu window will be displayed and operates the same as Main DVR's Setting Menu.
-

L.PLAYBACK "Local Playback": Searches the recorded images from local client system. By clicking the L. PLAYBACK button, the Playback window will be displayed and operates just like the Main DVR's Playback Menu.
-

DISCONNECT: Disconnects the current session.



2) You can turn on or off individual cameras by right clicking on the camera button at the bottom of the screen.

3) Screen Mode Icons

- Single-Screen-Mode
- 4-Channel Multi-Screen
- 6-Channel Multi-Screen
- 9-Channel Multi-Screen
- 10-Channel Multi-Screen
- 13-Channel Multi-Screen
- 16-Channel Multi-Screen
- 25-Channel Multi-Screen
- 32-Channel Multi-Screen

- 49-Channel Multi-Screen
- 64-Channel Multi-Screen
- Full-Screen Mode
- Next-Screen Mode
- Auto-Rotation Mode

4) System Status Window

: System Status Window shows the status or events from the DVR system

- Sever name: Displays the name of the remote site.
- Transmission speed: Displays the transmission speed of system.

5) Pan/Tilt/Zoom Control Box

: If a P/T/Z camera is installed, you can control focus, zoom, pan, tilt and other functions through this control box.

: Relay Off : Relay On

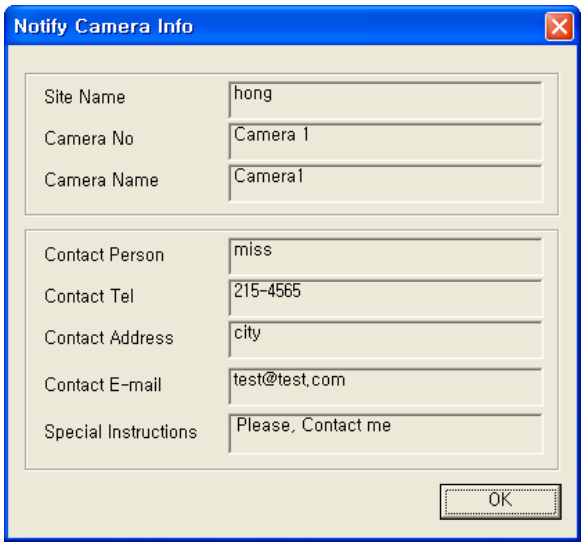
: System Status Window shows the status or events from the DVR system.

6) Camera arrangement on the live view.
By left clicking and dragging cameras on the screen, you can arrange the camera format to any sequence you wish.

Camera Information

DVR
-

: Click this button to show camera information from the



7.5. Options

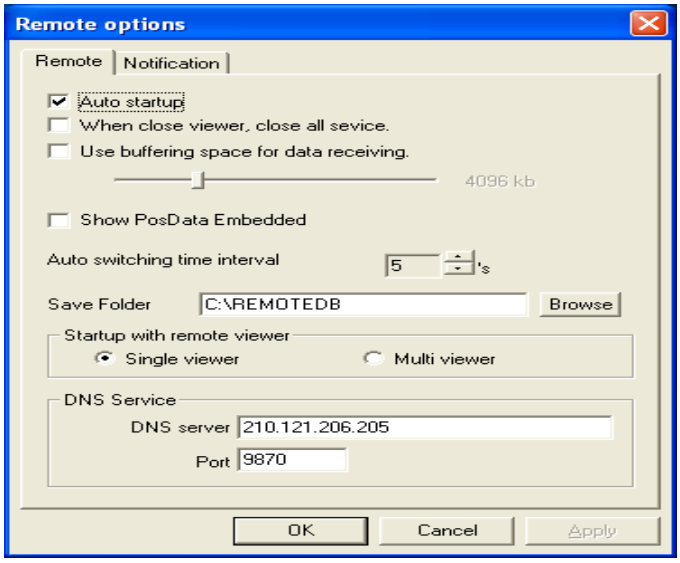
Right click the mouse button on any screen to bring up the options menu as seen below.

1) Network: Click on the Network option to bring up networking site information

2) Options: Click the Options menu to display the following

window: Remote Tab: Sets the viewer mode when starting or

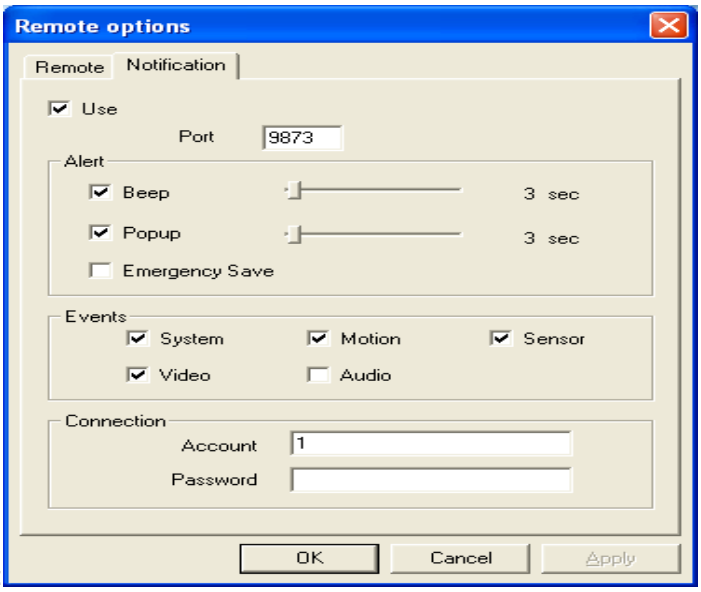
closing.



- Auto startup: Select this option to have the system to begin with windows.
- When close viewer, close all service: Check this box to close all services when the remote viewer program is shut down. This shuts down the resident program, which allows incoming alarm notifications.
- Use buffering space for data receiving: If you use a LAN for receiving video, you can use the buffering space to speed up the transfer. (Recommended setting is 4096KB)
- Show PosData Embedded: If a user selects this check box, Video and POS data is displayed as an overlay. If it is not selected, the data will be recorded, but not viewed on the video screen.
- Auto switching time interval: This sets the automatic display switching time (unit = seconds – default: 5sec, max: 30 sec)
- Save Folder: You can select a folder for saving image.
- Startup with remote viewer: Select start mode for the remote program – either single or multi.
- *DNS (Dynamic IP) service: refer to Section 9 (DNS Service)*

2-2) Notification Tab

:



- Use: Enable the PC to receive data from the remote DVR
- Alert
  - Beep: Creates and audible notification on incoming data.
  - Popup: Pops up video from an alarmed event on server.
  - Emergency Save: When remote notification is activated, the remote PC will backup the transferred video automatically. The action icon will turn green **Backup**.

If you click the action icon while it is green color, the remote backup will stop.

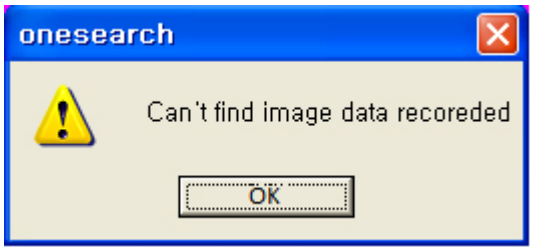
- Events: You can select the events which are applied to remote notification.
- Connection: If you save the Account ID and password, you can access systems without a separate login during remote notifications (recommended).

3)Sound: Select the Sound option to see following sub–menu. This allows you to send, receive, or activate two way audio communications between the server and remote sites.

- Duplex: Enables two way audio
- Out: Send audio data to the server (requires a local microphone).
- In: Receive audio from the server (requires connected speakers).
- Off: No use audio.

*Note: When you use the Multi Remote Monitoring viewer, you can use the two way audio mode only on the active server.

4) OneSearch :

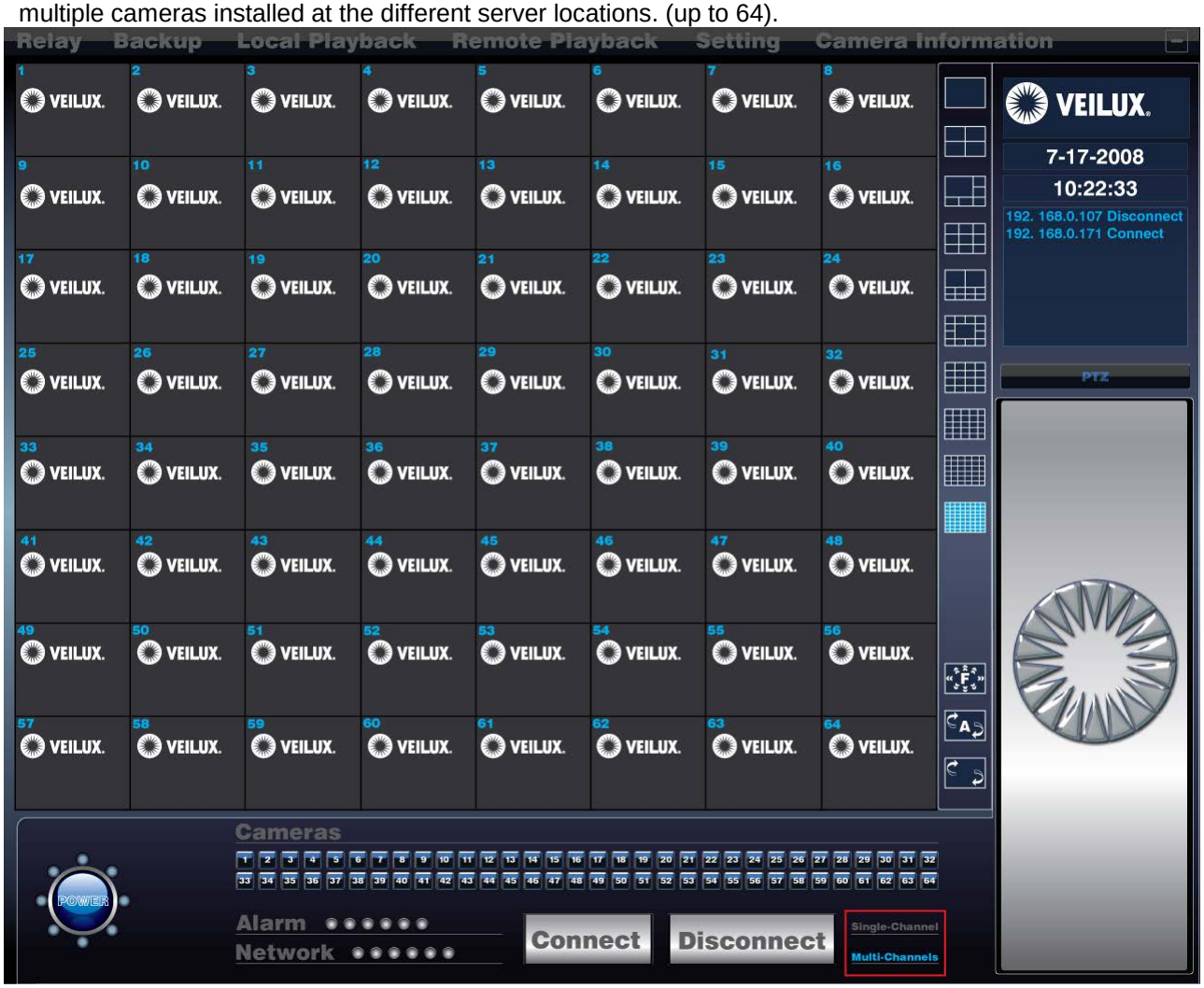


If there are no image recorded, it will be displayed this message box.

7.6. Multi Remote Monitoring

After run Remote program, if you select Multi Channel from the bottom of the screen, you can monitor

multiple cameras installed at the different server locations. (up to 64).

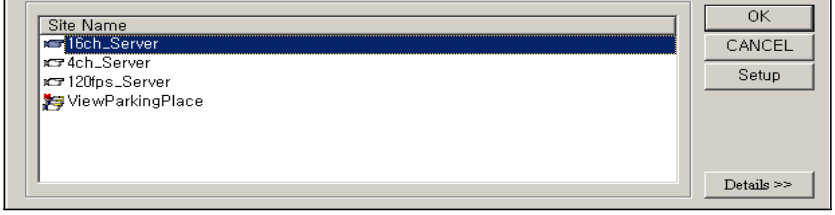


Single: One remote PC able to connect with one DVR server.

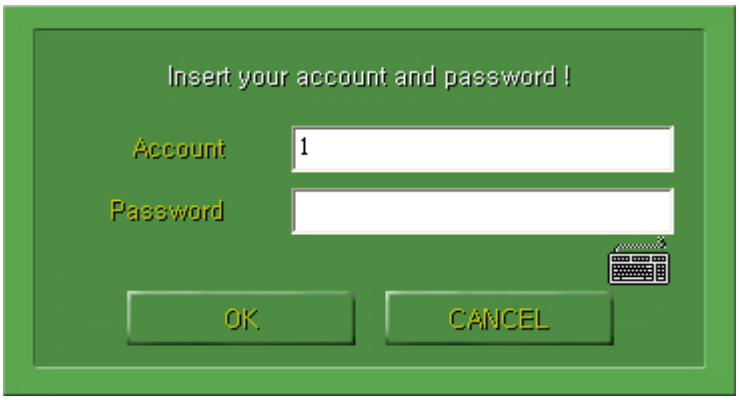
- Multi-Channel: One remote PC able to connect to multiple cameras and DVR servers.

1) Connection to Servers

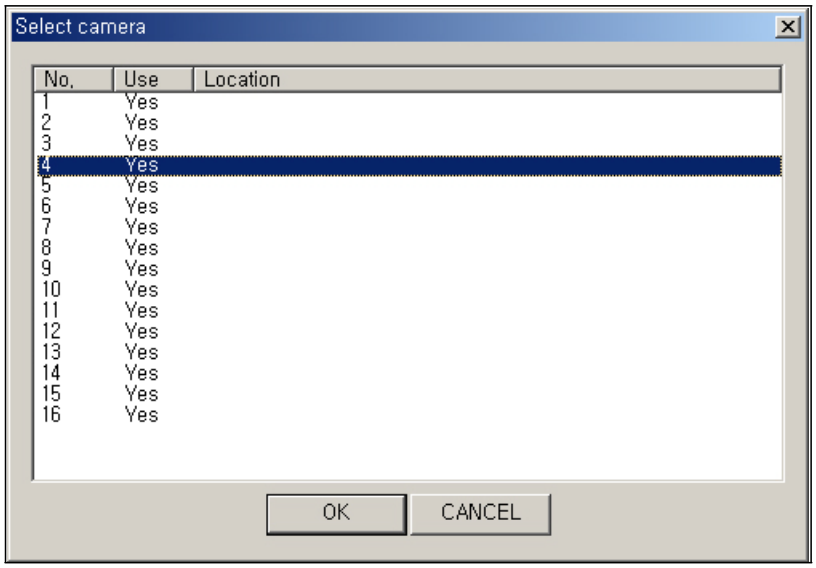
Each camera window can display a camera from any server. First, choose the window to which to view the camera in, “connect” while in Multi channel mode, and select the server you want to connect to. Then choose the camera number you want. You will need to do this for each window. You can define groups of
camera in the Group Add section under Setup.



Insert ID and password for the server to be connected.



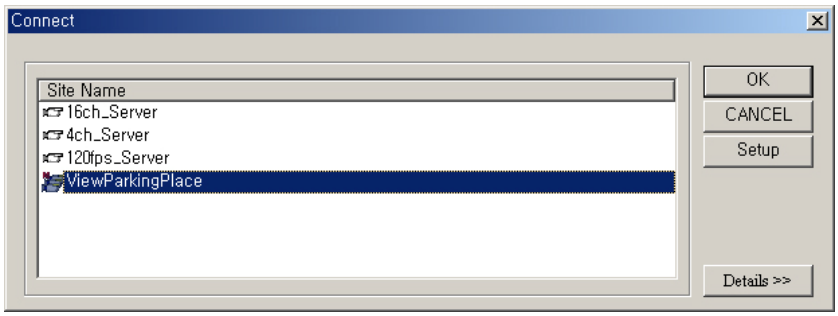
After logging on, the system shows the following window, displaying the available cameras from the chosen server. Simply select the desired camera to monitor.



Once the connection is established, you will the video on the No.2 screen of client.

You can connect other channels by repeating the process the same as above.

1-2) Using the Group connect
When you select “Multi-Channel” and click “CONNECT”, you will see the following window. Select the desired group from group table and click “OK”.

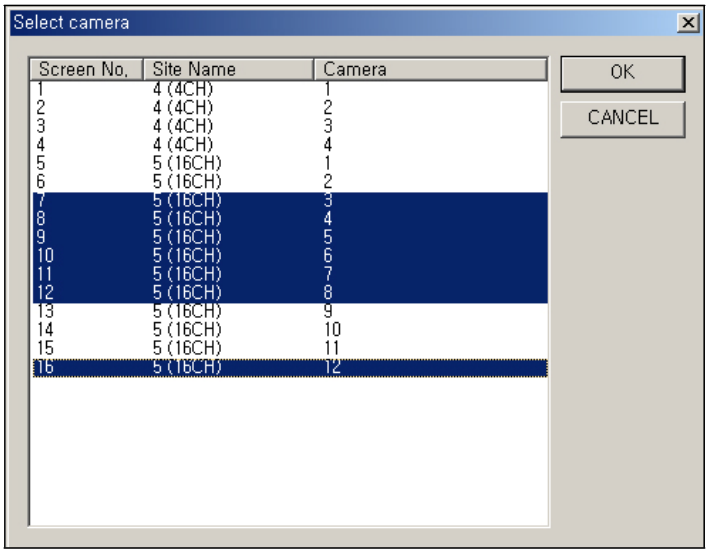


2) Action Button

R. PLAYBACK “Remote Playback”: Used to search recorded images from Server DVR. When you click the R. PLAYBACK button, the Playback window will be displayed and operate the same as Main DVR’s Playback Menu. **(Note the action button**

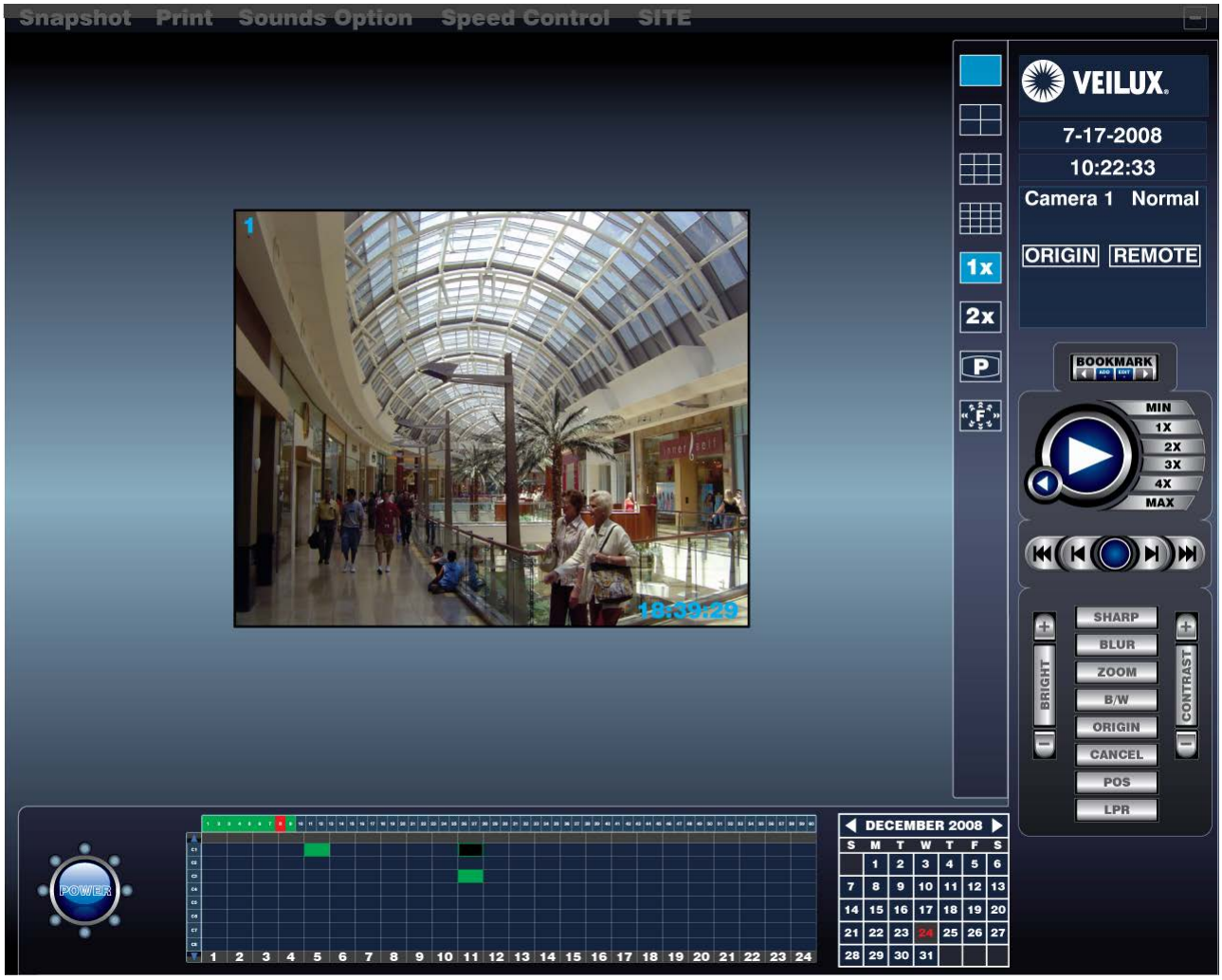
Backup. If you click this icon during the remote search, the icon will change to green and the transmitting images will be recorded at your PC).

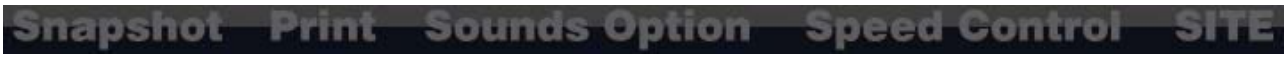
- **Setting** SETTING: Configure any of the system parameters on the DVR from the Remote system. By clicking the SETTING button, the Setting Menu window will be displayed and operates the same as Main DVR’s Setting Menu.
- **Local Playback** L.PLAYBACK “Local Playback”: Searches the recorded images from local client system. By clicking the L. PLAYBACK button, the Playback window will be displayed and operates just like the Main DVR’s Playback Menu.
- **Disconnect** DISCONNECT: Disconnects the current session. The following window will display, and then select the desired camera(s) to disconnect and click “OK”.



7.7. Local Playback

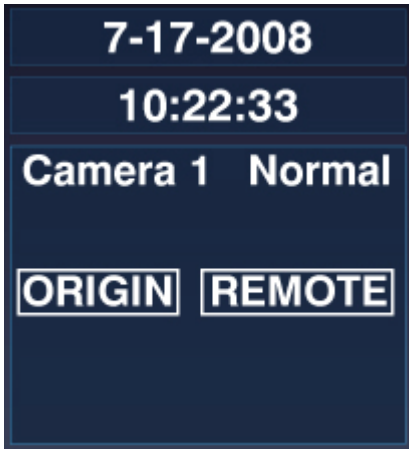
To search locally recorded images previously captured from the remote system, click on the L. PLAYBACK button from the main screen in the “DVR Remote” program. The local playback window will be displayed





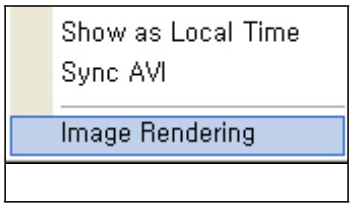
- Site: Select the Site button to select the desired site containing the recorded video.

Once you have selected the desired site, you will need to select either “ORIGIN” or “REMOTE” for the type of recording (see below).



- ORIGIN: If you recorded transmitted images to your local machine from the DVR system through remote search, it will be recorded here.
- REMOTE: If you recorded transmitted images to your local machine from the live view or main Remote Viewer screen, it will be recorded hear.

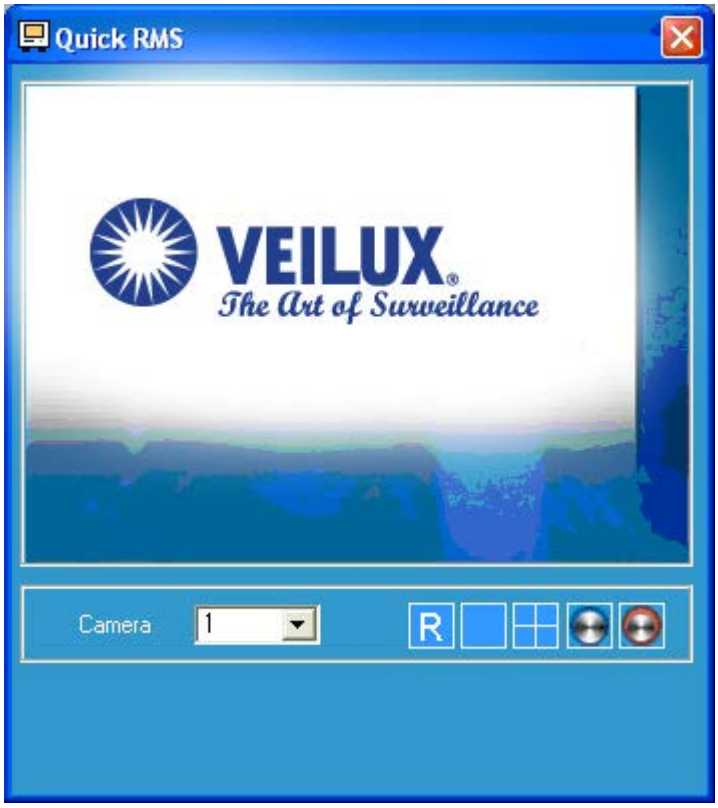
If user wants to see Video and Pos data embedded, user click right button of the mouse, check “Show Pos data” menu button



- Show Pos Data: If you want to see Video and Pos data embedded, check ”Show PosData”
- Show as Local Time: If you want to search to get local time, check this function.
- Sync AVI: If you want to save image synchronize with time, click Sync AVI. This method has dump images to synchronize with time. So if you don’t want it, don’t check.
- Image Rendering: If you use Grandeye IPcamera, you can control this function. This function allows fisheye image to be rendered as VCams(Virtual camera) or panorama views. (Refer to 70 page)

7.8. Quick RMS

The Quick RMS is a quick way to connect with a small window that can be kept on your screen while you do other things. The Quick RMS program is located in Start/Programs/DVR/Remote.



: Connect button
Once a site has been defined in the main RMS, clicking this button will give you access to the site(s). Log on as in the main program.

: Disconnect button

: Single-Screen-Mode

: Multi-Screen-Mode

Camera: Select the camera number to want to view.

: After you connect to server, If you click Relay button, you can control relays of DVR server.

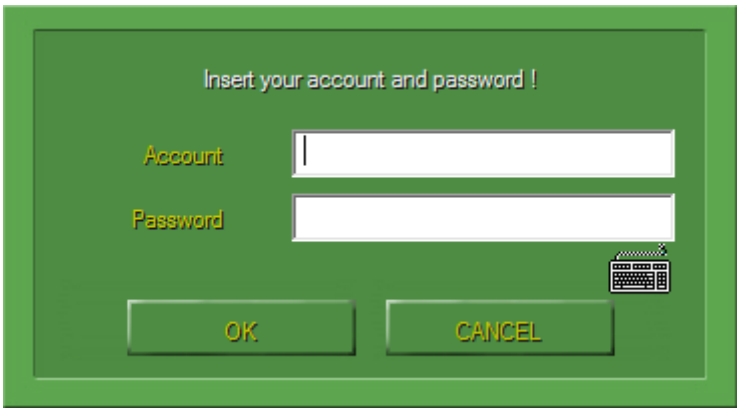
8. BACKUP

8.1 Start Application

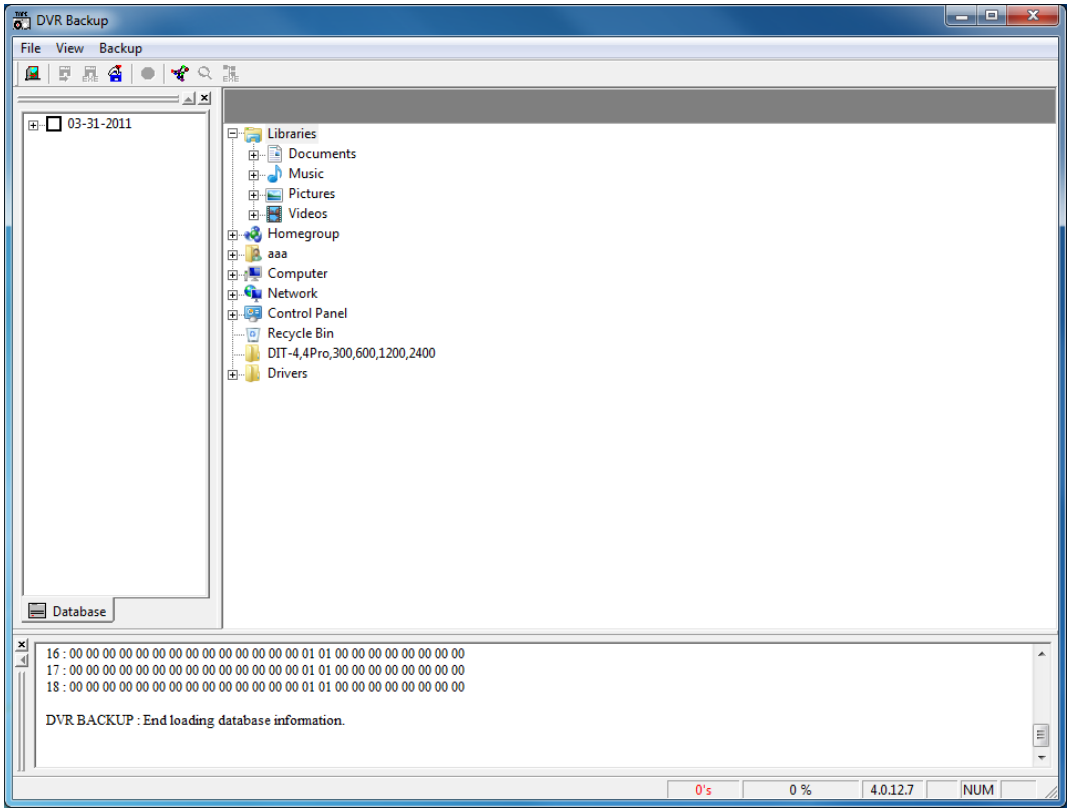
DVR BACK-UP program allows backup the recorded data into a various devices such as HDD, DAT, DVD, ONSTREAM, CD-RW etc., either manually or automatically.

To backup recorded data, go to Start/Programs/DVR/Image Backup (dvBackup.exe) or, Click "BACKUP" from the monitoring screen.

Enter an account and password with access to the backup features (default Account is "1" with no password. Click "OK"



After logging on, the following screen is displayed.



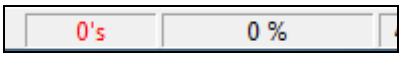
- Show the existing recording data, listed by date.
- Show the device or folder the backup will go into.
- Show the status of the backup.

8.2. Functions

8.2.1 Tool Bar

- Exit: Exit button
- Start: Start button for manual backup.
- Backup to exe. File: See section 7.4
- Quick Backup
- Stop: Stop or pause the backup.
- Option: Sets Manual Back-up or Scheduled Backup
- Viewer: Opens the Back-up Viewer
- Make .exe files: Make to .exe file using created Backup Folders and dll

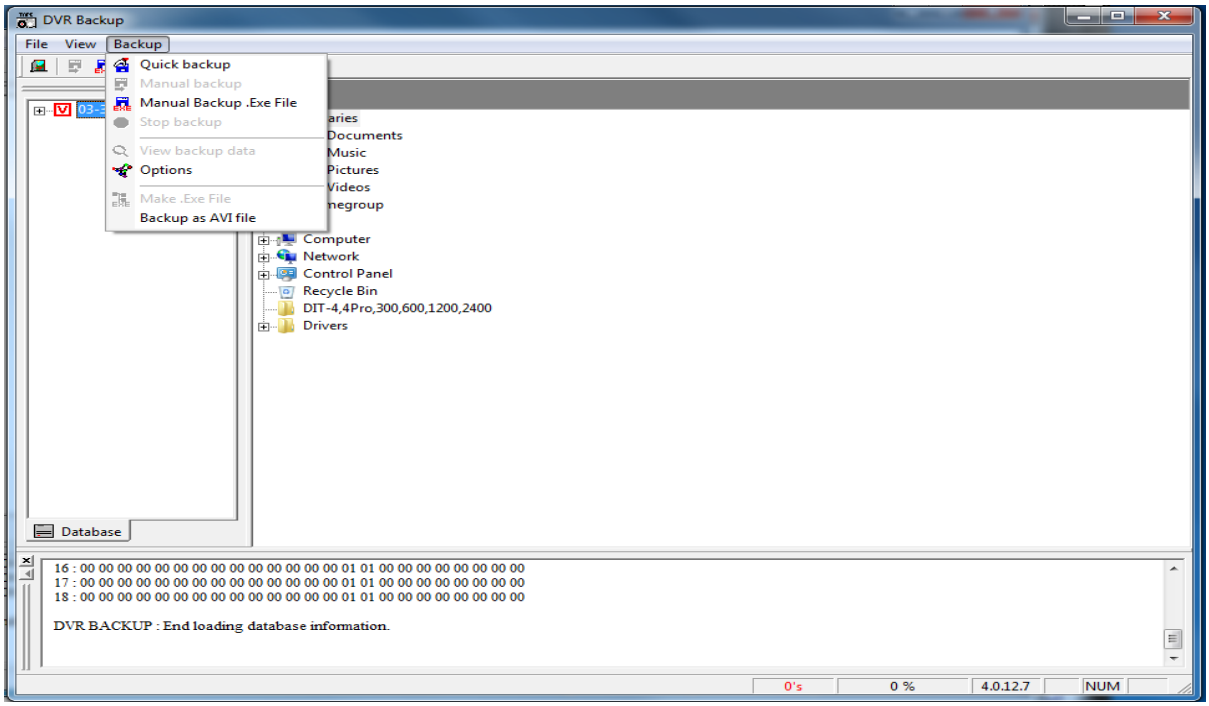
8.2.2 Status Bar



- Time: Shows the current second of video being backed up.
- Processing: Shows the level of completion for the current backup.

8.2.3 Menu Bar

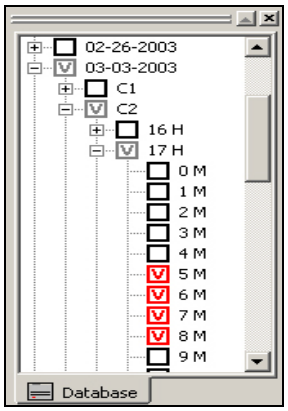
As an option, you can backup files in AVI format. Check this “Backup as AVI” button for this option.


DVR Backup
File
View
Backup
Quick backup
Manual backup
Manual Backup .Exe File
Stop backup
View backup data
Options
Make .Exe File
Backup as AVI file
Documents
Music
Pictures
Videos
Computer
Network
Control Panel
Recycle Bin
DIT-4,4Pro,300,600,1200,2400
Drivers
Database
16 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 00 00 00 00 00 00 00 00
17 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 00 00 00 00 00 00 00 00
18 : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 01 01 00 00 00 00 00 00 00 00
DVR BACKUP : End loading database information.
0's
0 %
4.0.12.7
NUM

8.3 Manual Backup

To backup a specific time of recorded data, select this option and follow the sequence below.

8.3.3 Select desired recording data for backup



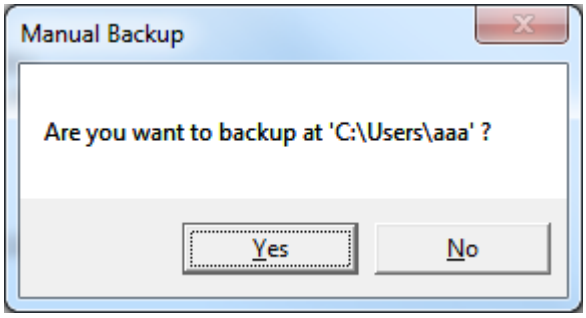
Using the recorded data tree, you can select data by camera, then day, hour, and minute.

8.3.4 Select device or folder for backup

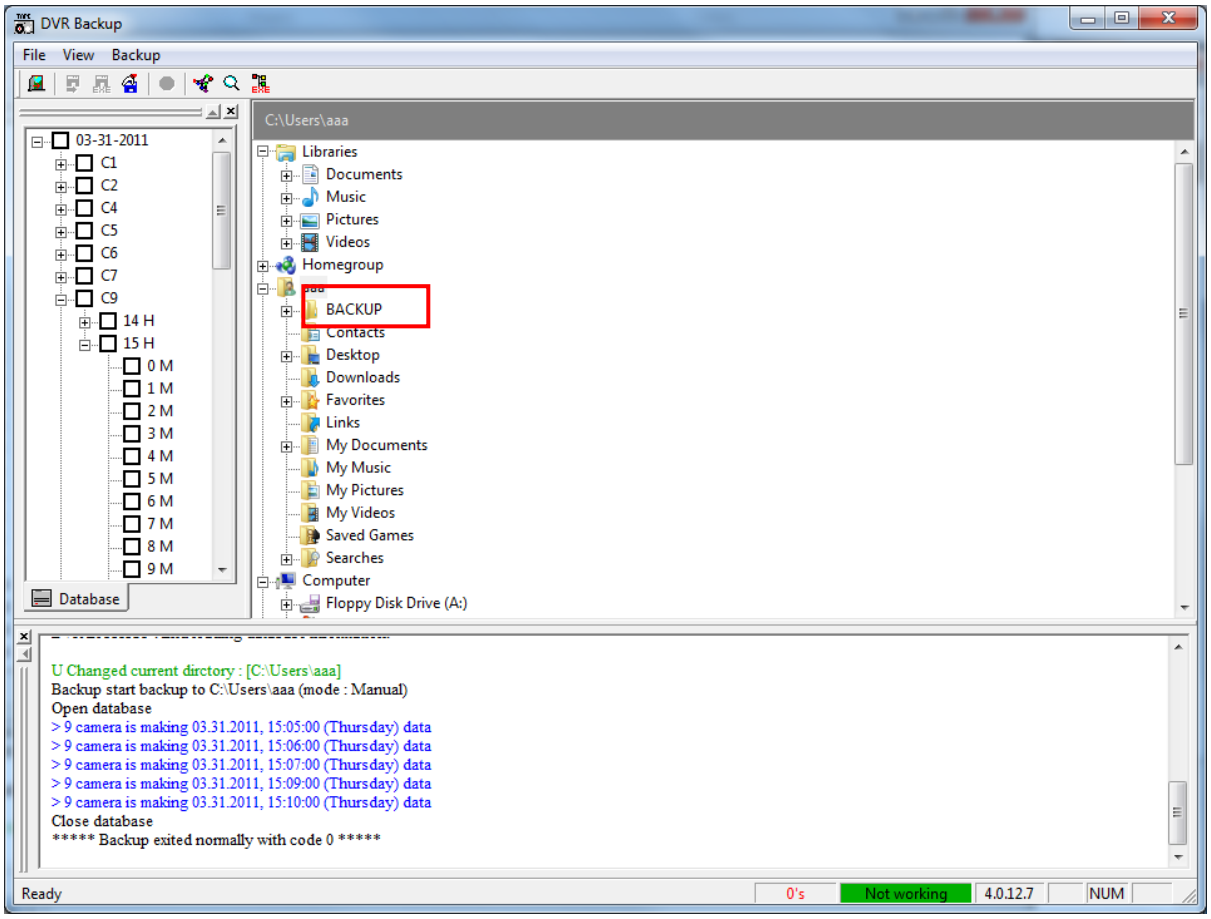
8.3.5 Start Manual backup

After setting the recorded data and device (or folder) for backup, the start button will become active.

Click “Start” button and click “Yes”



Once the backup is done successfully, the status window will show the message “Backup exited normally with code 0”, and the processing bar will show “Not working”. A new folder called “BACKUP” is created.



8.4 Manual Backup.exe file

By backing up recorded data using the Backup.exe function, the data and the video player are put into one file, and can be played back on any other Windows based PC.
Note: The backup.exe file needs to be less than 2GB.

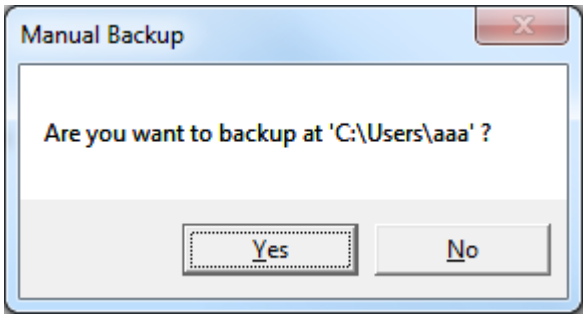
8.4.1 Selected desired recording data for backup

Please refer to section 7.3.1.

8.4.2 Make a backup.exe file

The process is the same as described above, except that you will choose the .exe option (see below).

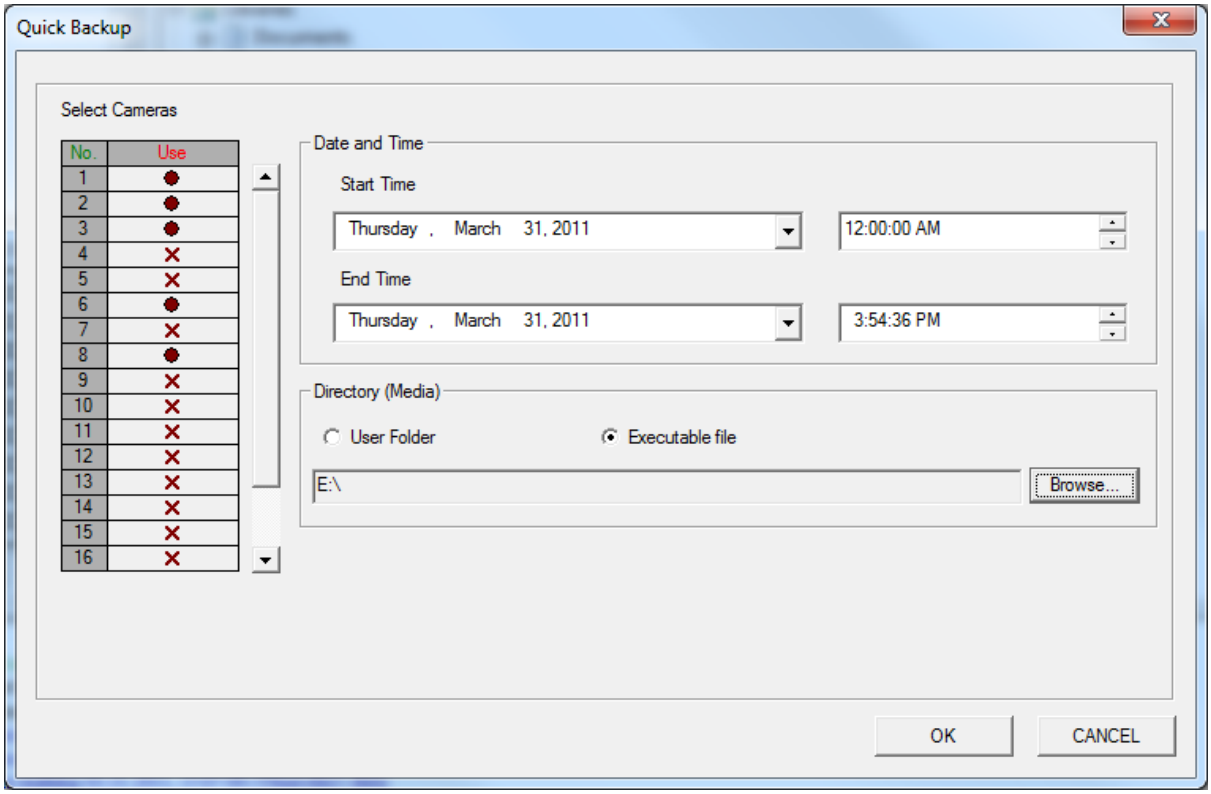
Click “Start” button and click “ Yes”



Once you completed the backup, you can click on the executable file and it will execute the video player. Look at the calendar for the recorded dates (in red) and click on the date. You will see the available video, and the player will be active.

8.5 Quick Backup

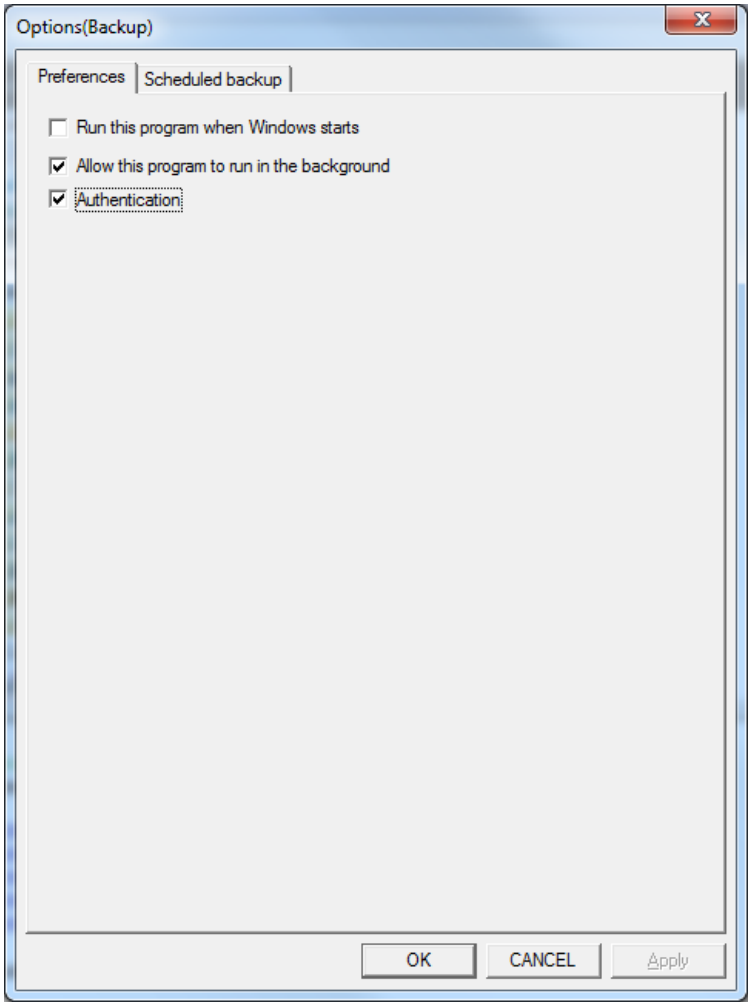
Quick Backup is a quick, simple way to back up data. Once you’ve clicked on the Quick Backup button, the following screen will be displayed.



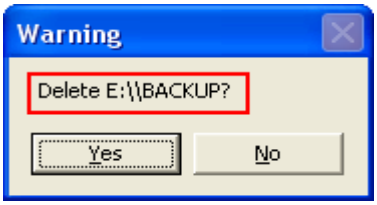
- *Select Cameras:* Selected cameras will appear as a red circle – clicking toggles.
- *Date and Time:*
  - *Start Time:* Enter the desired start time.
  - *End Time:* Enter the desired end time.
- *Directory (Media):* This is where the file will be saved.

The above example shows the video to be recorded as 12:00 a.m. ~3:54 p.m., recording cameras 1 recorded to the “E:\” drive.

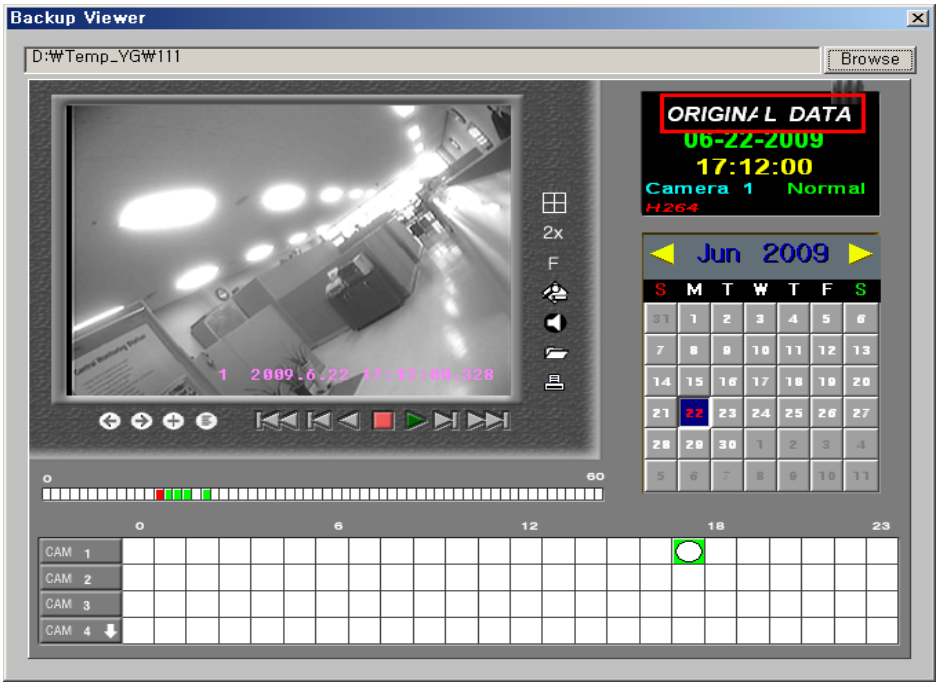
8.6 Authentication Backup



- Authentication: If you check this function, it makes backup files with authentication.



In case of authentication backup, you have to delete files in backup folder and click “Yes” button.

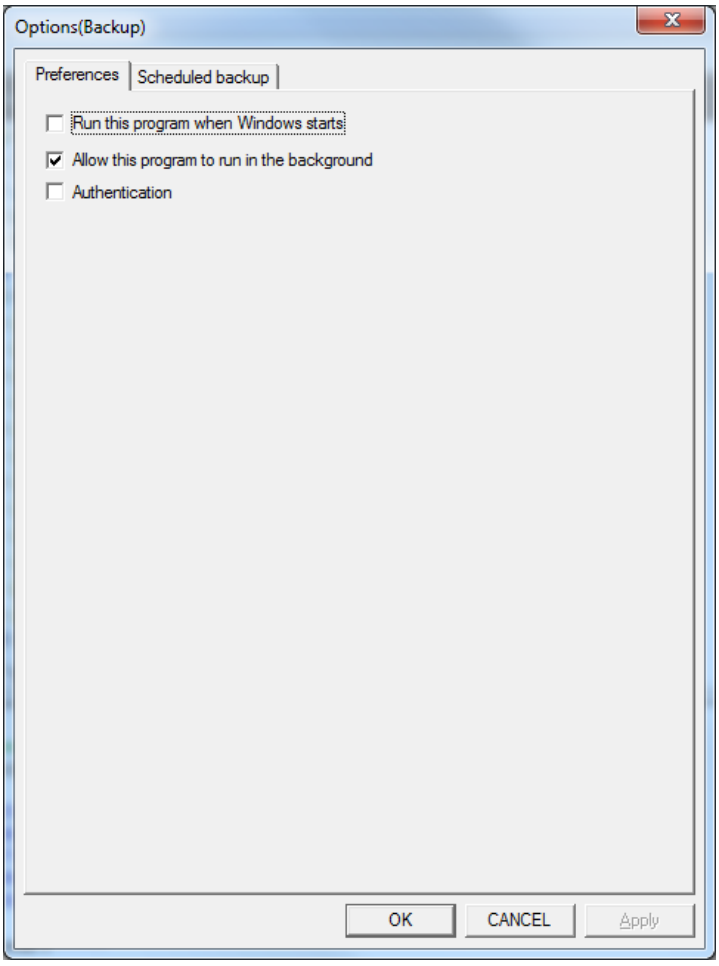


Playback goes on to the next image if it was not changed with showing “Original Data”.
Playback will be stopped with showing “FALSE Data” if the back-up data would be modified or wrong.

8.7 Auto Backup

8.7.1 Option Setup

Click the “Change Backup Options” button on Tool bar to display the following window.

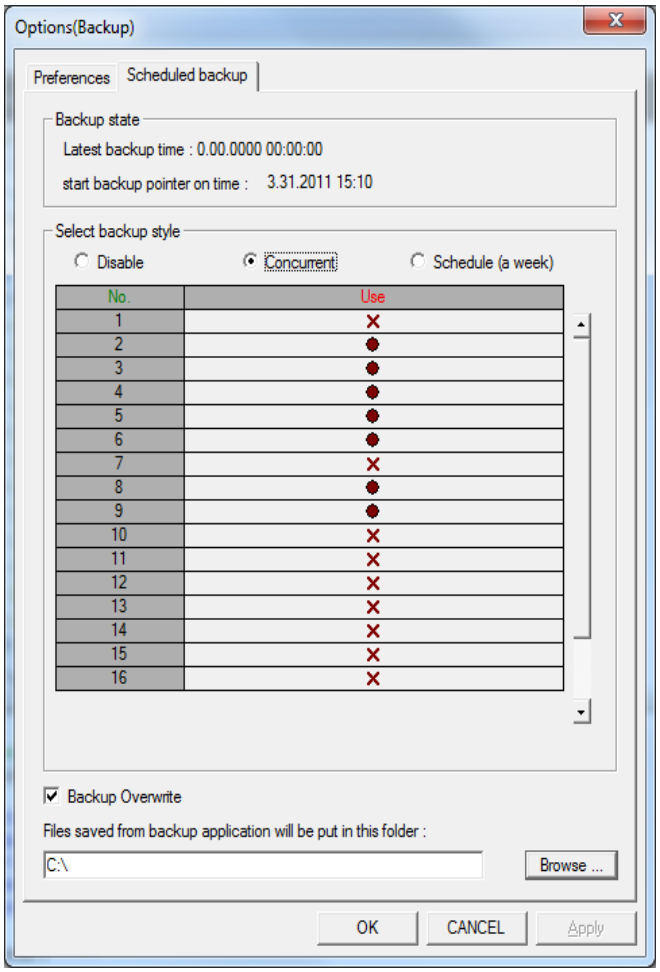


- *Run this program when windows starts:*
- *Allow this program to run in the background:* If the Backup program is running, the program is located on the Task bar.

- *Authentication:* Refer to section 7.6.

8.7.2 Concurrent Backup Setup

Click the “Scheduled backup” tab. The default setting is disabled.



Note: Scheduled cameras are designated with a red circle. The X indicates that the camera will not be backed up.

- *Backup state:*
  - *Latest backup time:* Show latest backup time of schedule backup.
  - *Start backup pointer on time:* Starting point for next backup

- Select backup style
  - Disable: Disable the scheduled backup.
  - Concurrent: Recording and Backup is done at the same time.
  - Schedule (a week): a daily or weekly backup schedule.

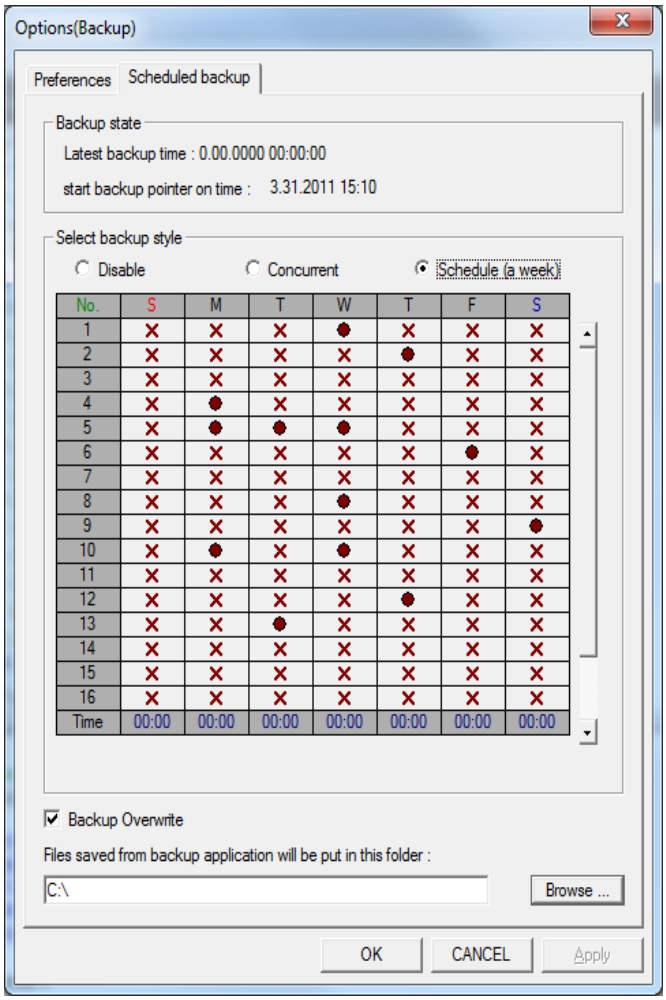
- Backup Overwrite: If the space is not enough for recording on schedule backup, the oldest data will be removed (all camera data for 1 minute) and backup.

- Files saved from backup application will be put in this folder:

The above example shows that video will be concurrently backed up, but only backing up cameras 2, 3, 4, 5, 6, 8,9 with the backup located on drive F:.

8.7.3 Scheduled Backup Setup

Use this option to set a daily or weekly backup.



Note: If you want to set all cameras on a particular day or time, click a “Day” cell, “Time” cell, or click on the “No.” cell to select all cameras.

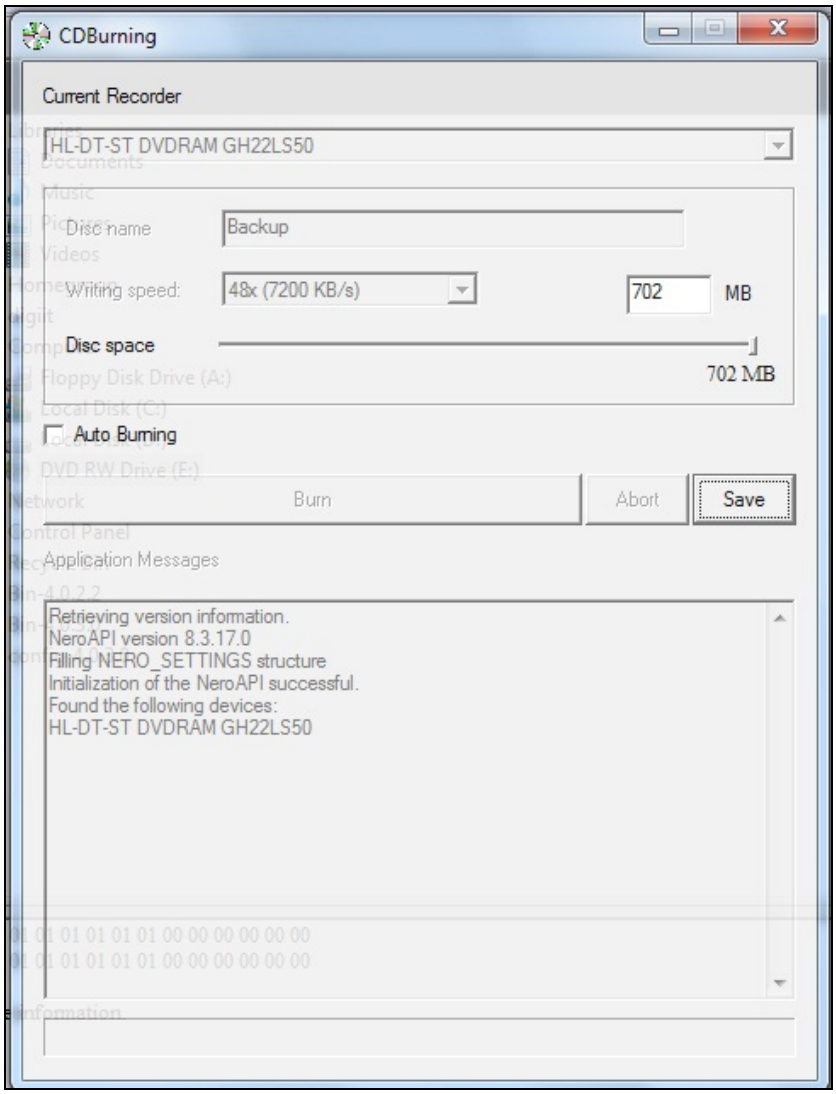
Note: Depending on the configuration of your specific DVR and the data being recorded, backups may slow the recording frame rate down.

- *User select No. of cameras and Day for desired backup*
- *Time:* Starting time for backup operation.

Above picture shows all data backed up except Sunday.

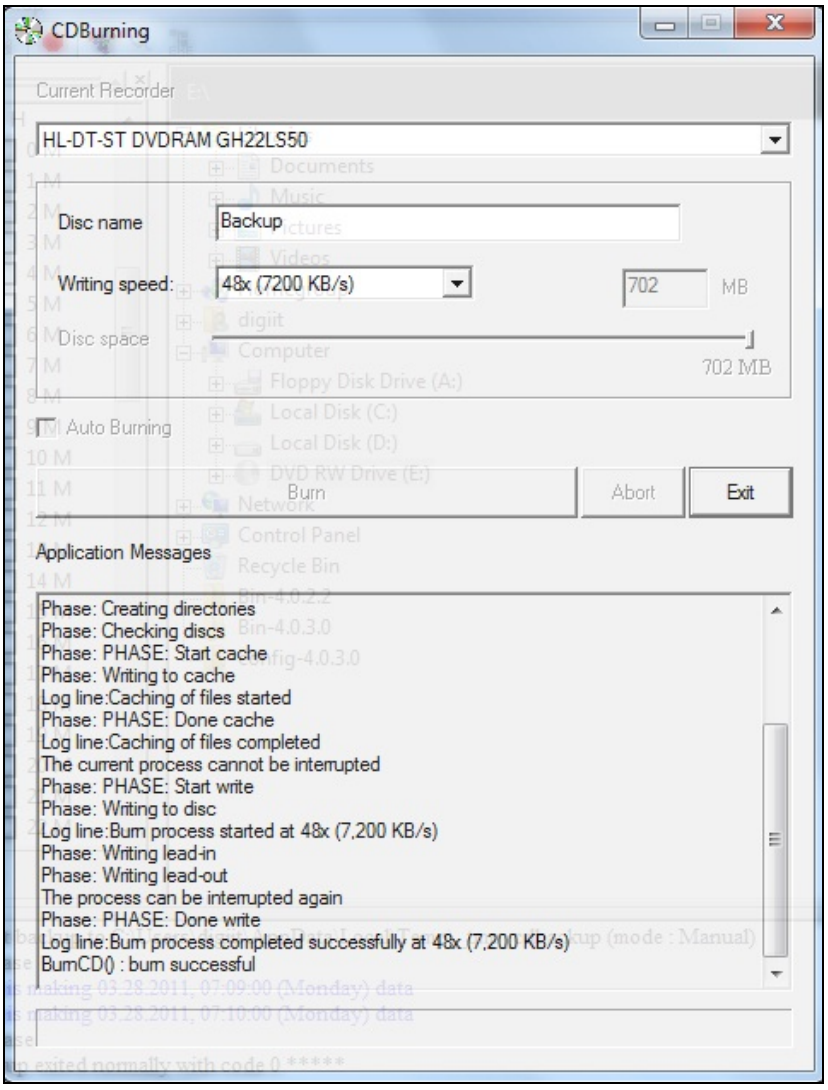
8.8 Backup on CD or DVD

Backing up to a CD-R/RW or DVD-R/DVD-RW is shown below, as long as Nero CD burning software is installed in your system.



- *Disk space:* You can choose the amount of space on the CD which you want to use for backup data (default max 680MB). If the Disc space shows 0 MB, there is no space to write, or you need to insert a writable CD.
- *Auto Burning:* If you select this function, burning will be automatically (recommended).

Once the options have been set, click “Save” and the following will be displayed.

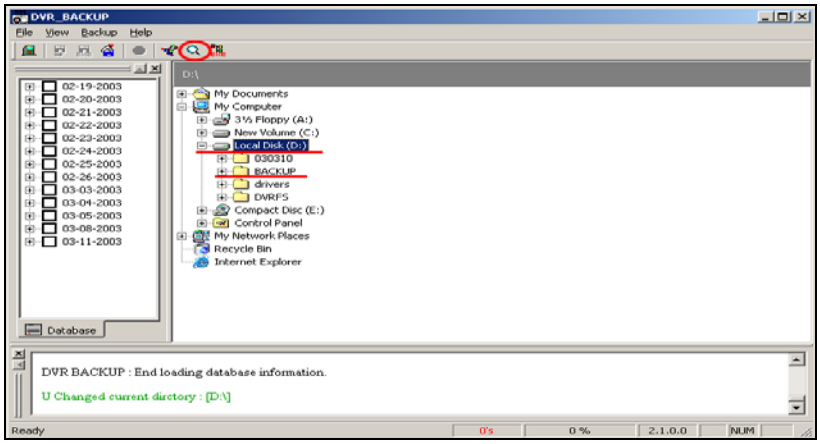


- *Disk Name:* Name your backup disc here.
- *Writing Speed:* Select speed of writing to burn(default is ok in most circumstances).
- *Burn:* Click here when you are ready to make the copy.
- *Abort:* Click “Abort” to abandon the backup operation.
- *Exit:*

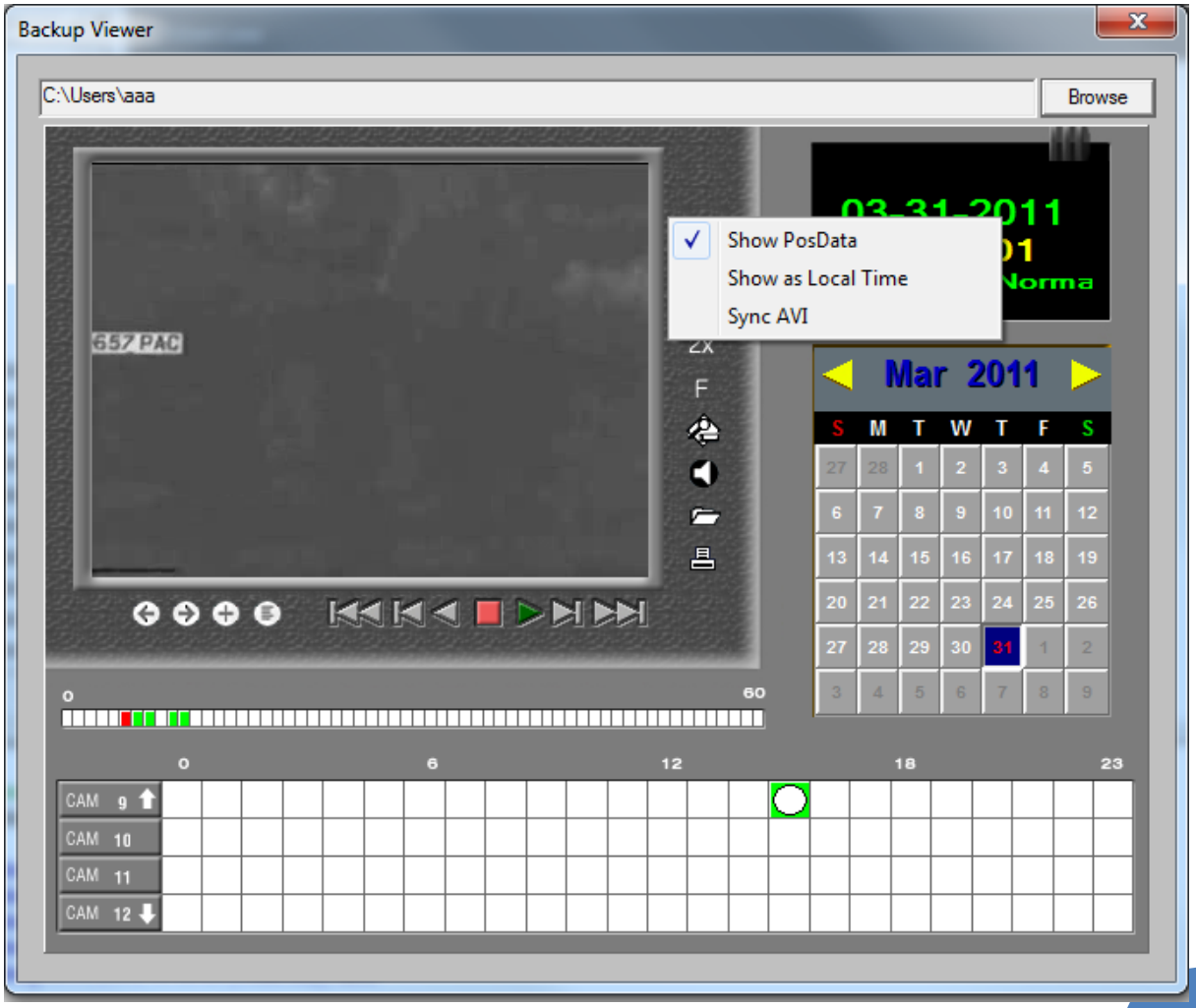
If the data size to backup is more than the capacity of your disc, you will need to insert additional media during the process.

8.9 Backup Viewer

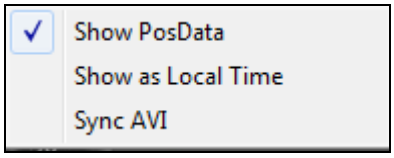
Follow this procedure to view data backed up to your hard drive or CD. Typically you would use this process if the backed up data is not in the .exe form.



Click on the Viewer icon to bring up the playback screen. Please refer to “Play Back“ for detailed operation of the “Back-up Viewer”.
Click on the Browse button to choose a different directory if needed.



- User can search data of backup by multi viewer.

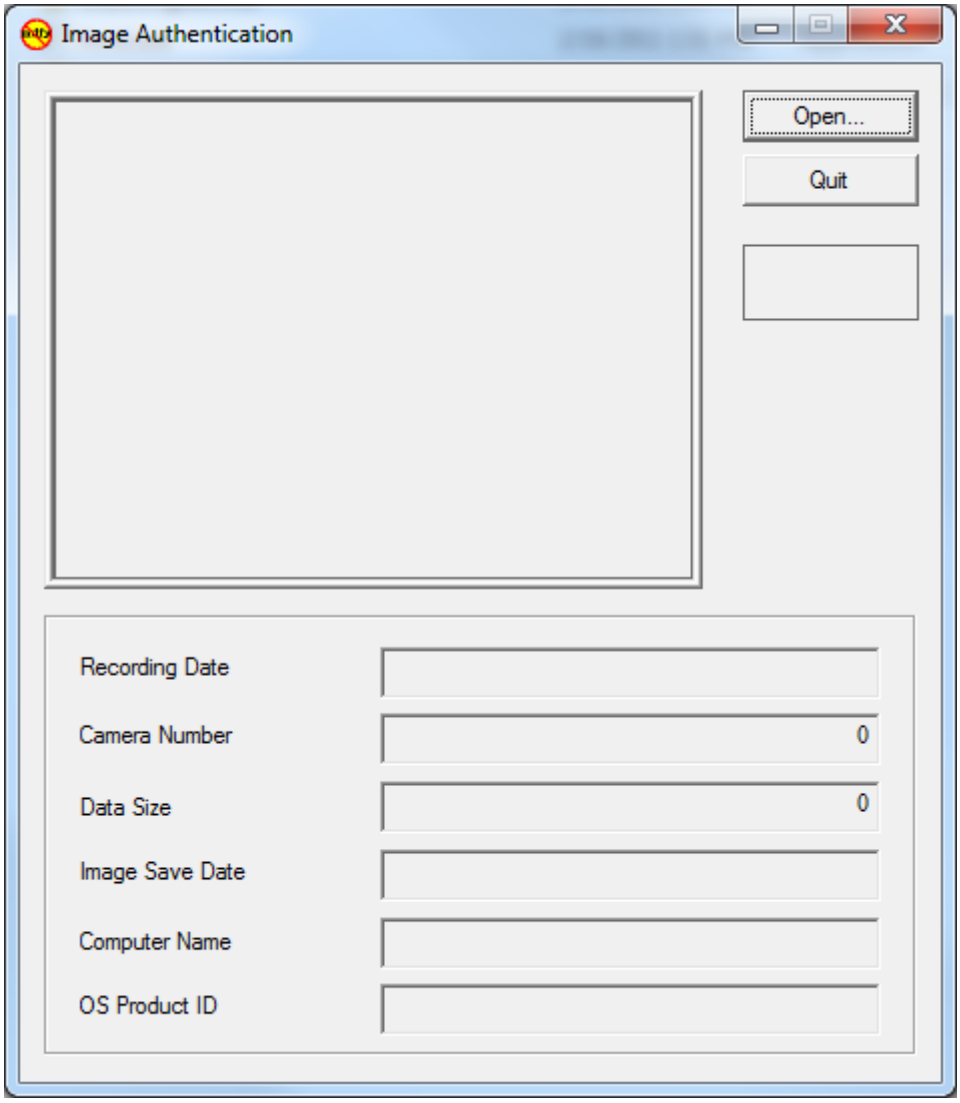


- *Show Pos Data:* If you want to see Video and Pos data embedded, click right then check ”Show PosData”
- *Show as Local Time:* If you want to search and view local time, click the right of the mouse, check this function.

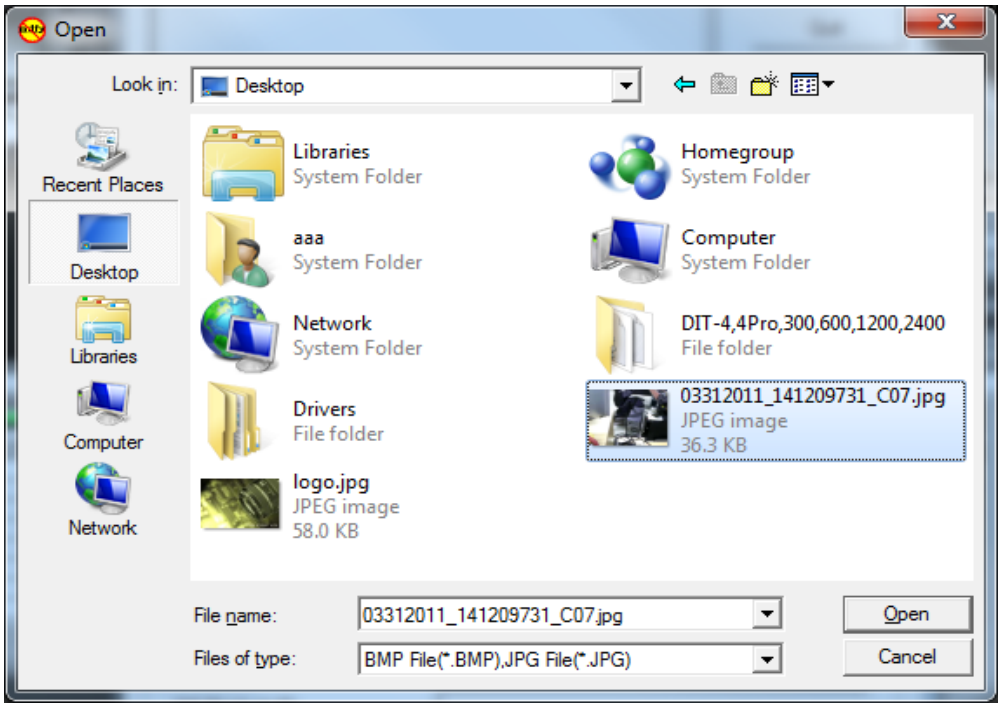
9 Image Authentication

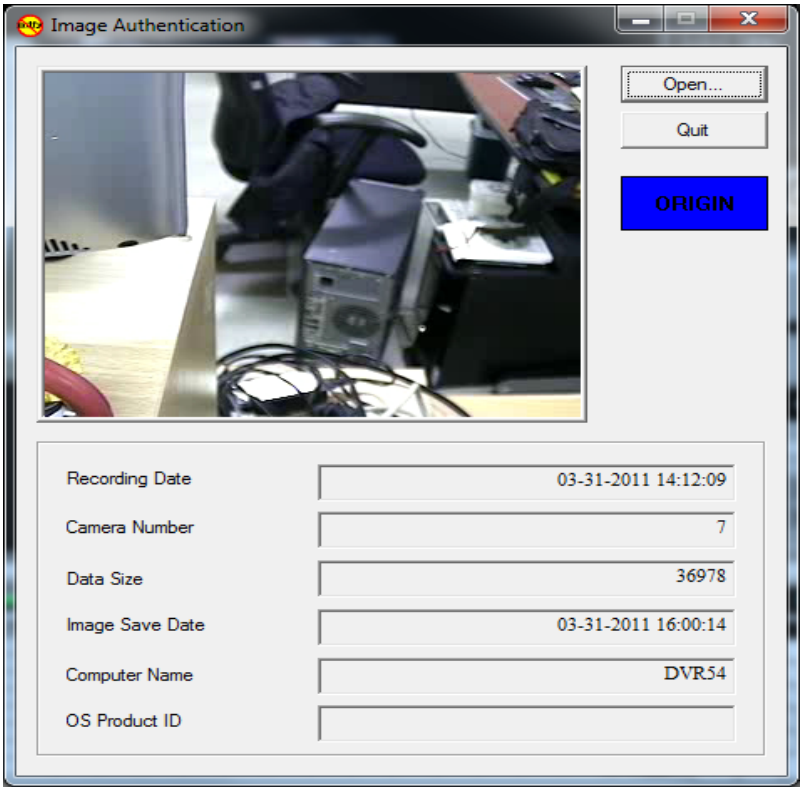
This is a program for authenticating recorded JPG or BMP images in saved from the search program.

Start the “Image Tool” program by clicking Start/Programs/DVR/Tools /Image Authentication, or run the ImgAuth.exe program in C:\Program Files\DVR\CommonFiles\Tools folder.

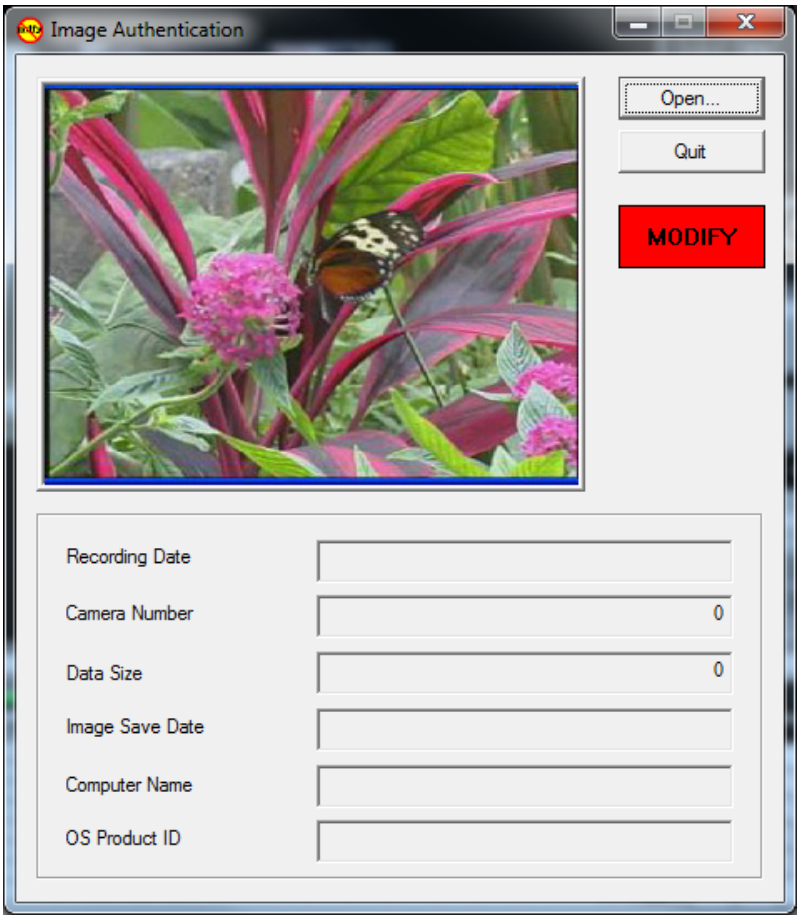


- Click “Open” to find an image file.
- Select an image file.





- ORIGIN: If this is an original, unaltered image, the image data will appear on the screen and the “Origin” notification will appear.

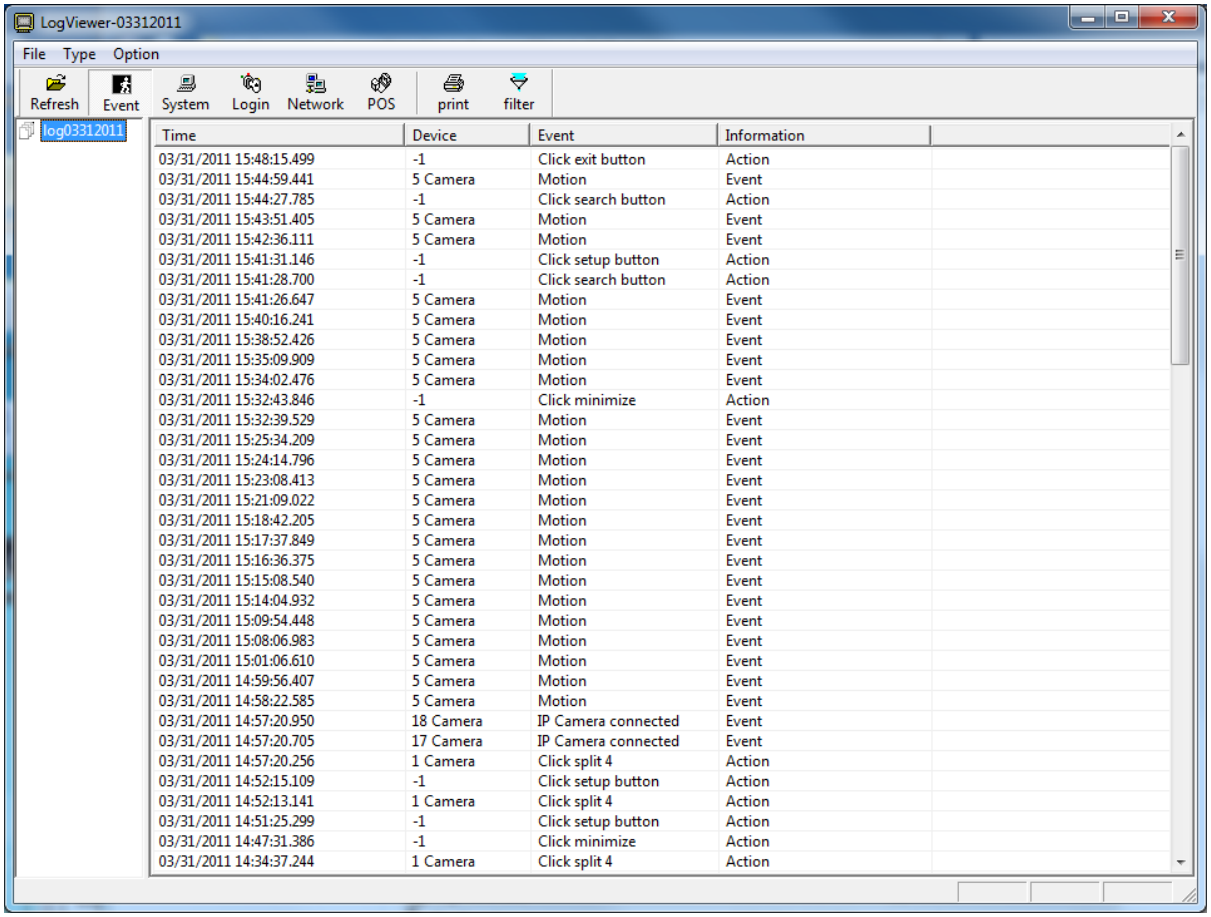


- Modify This is a modified image.

10 Log Viewer

Click C:\Programs Files\DVR\Main\LogViewer.exe, or Start/Programs/DVR/Main/Log Viewer.
This program shows events, system changes, logins, network connections, and POS logs recorded.

10.1 Event



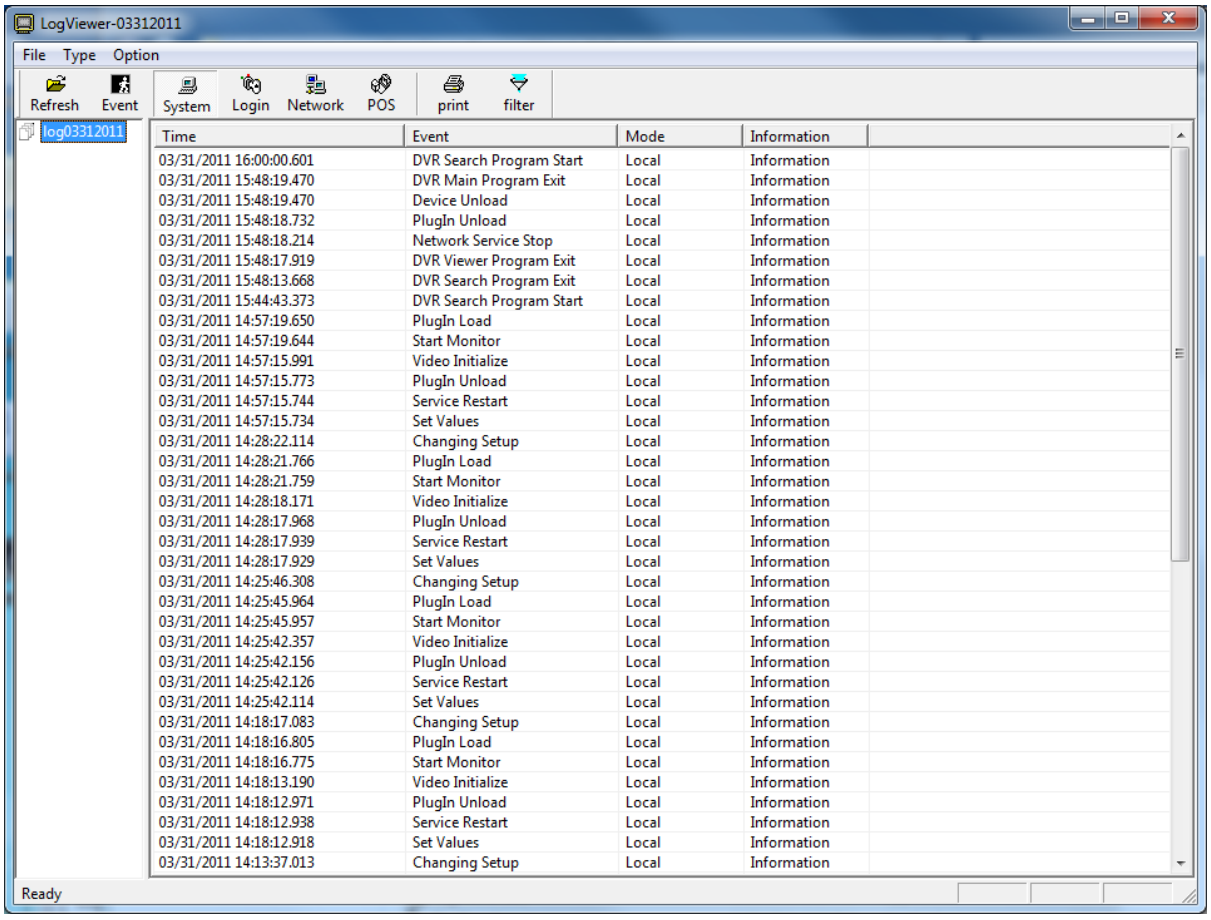
Time	Device	Event	Information
03/31/2011 15:48:15.499	-1	Click exit button	Action
03/31/2011 15:44:59.441	5 Camera	Motion	Event
03/31/2011 15:44:27.785	-1	Click search button	Action
03/31/2011 15:43:51.405	5 Camera	Motion	Event
03/31/2011 15:42:36.111	5 Camera	Motion	Event
03/31/2011 15:41:31.146	-1	Click setup button	Action
03/31/2011 15:41:28.700	-1	Click search button	Action
03/31/2011 15:41:26.647	5 Camera	Motion	Event
03/31/2011 15:40:16.241	5 Camera	Motion	Event
03/31/2011 15:38:52.426	5 Camera	Motion	Event
03/31/2011 15:35:09.909	5 Camera	Motion	Event
03/31/2011 15:34:02.476	5 Camera	Motion	Event
03/31/2011 15:32:43.846	-1	Click minimize	Action
03/31/2011 15:32:39.529	5 Camera	Motion	Event
03/31/2011 15:25:34.209	5 Camera	Motion	Event
03/31/2011 15:24:14.796	5 Camera	Motion	Event
03/31/2011 15:23:08.413	5 Camera	Motion	Event
03/31/2011 15:21:09.022	5 Camera	Motion	Event
03/31/2011 15:18:42.205	5 Camera	Motion	Event
03/31/2011 15:17:37.849	5 Camera	Motion	Event
03/31/2011 15:16:36.375	5 Camera	Motion	Event
03/31/2011 15:15:08.540	5 Camera	Motion	Event
03/31/2011 15:14:04.932	5 Camera	Motion	Event
03/31/2011 15:09:54.448	5 Camera	Motion	Event
03/31/2011 15:08:06.983	5 Camera	Motion	Event
03/31/2011 15:01:06.610	5 Camera	Motion	Event
03/31/2011 14:59:56.407	5 Camera	Motion	Event
03/31/2011 14:58:22.585	5 Camera	Motion	Event
03/31/2011 14:57:20.950	18 Camera	IP Camera connected	Event
03/31/2011 14:57:20.705	17 Camera	IP Camera connected	Event
03/31/2011 14:57:20.256	1 Camera	Click split 4	Action
03/31/2011 14:52:15.109	-1	Click setup button	Action
03/31/2011 14:52:13.141	1 Camera	Click split 4	Action
03/31/2011 14:51:25.299	-1	Click setup button	Action
03/31/2011 14:47:31.386	-1	Click minimize	Action
03/31/2011 14:34:37.244	1 Camera	Click split 4	Action

- *Time:* The time when the Motion, Sensor, or Video loss event occurred.
- *Device:* Show the camera associated with the event.
- *Event:* Show the type of event that occurred.
- *Information:* Display the reason for logging the event as follows.
  - *Information:* This shows information occurred.
  - *Warning:* This shows warning occurred.
  - *Error:* This shows error occurred.

Double click on the log list and you can view related video in Playback. If you are prompted for the logon window to run Playback, type the User and Password.

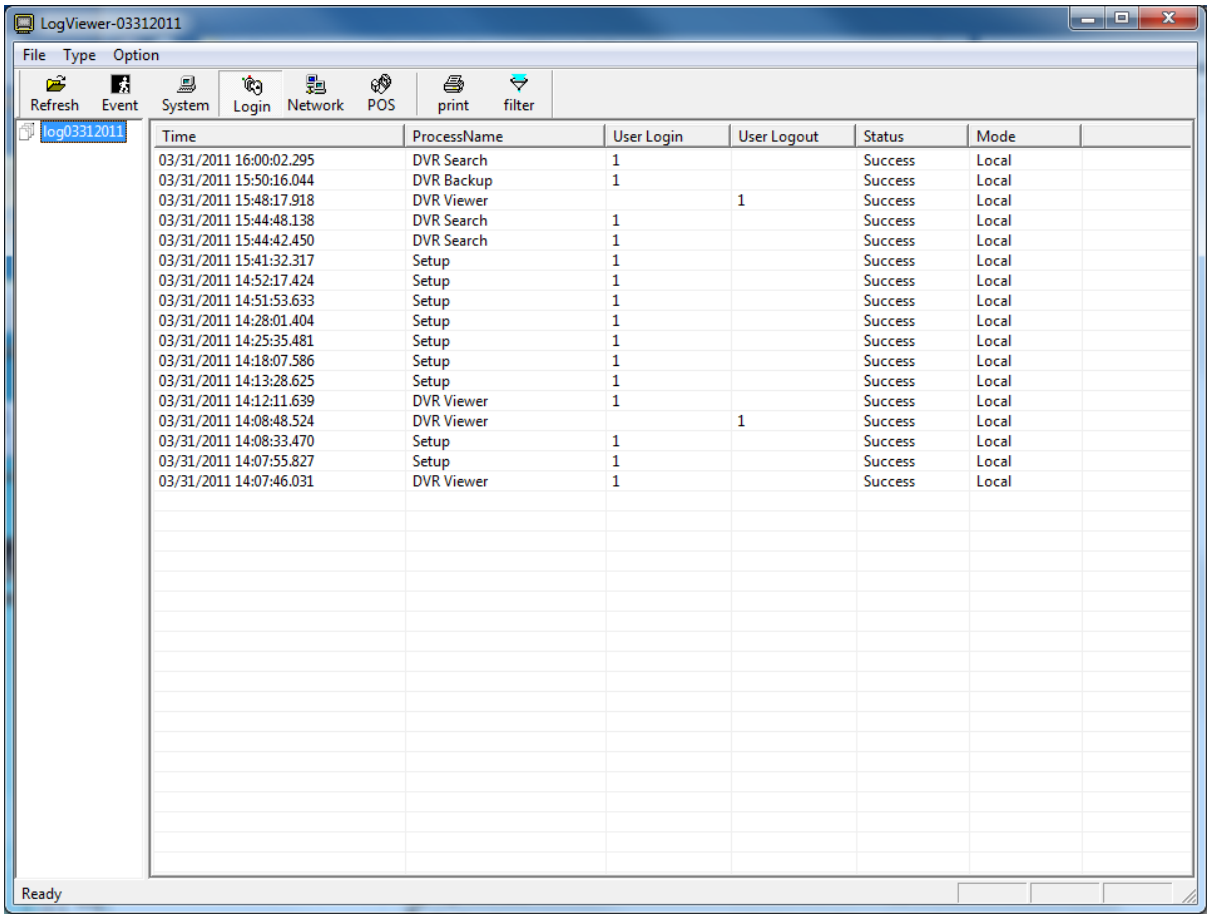
One click on the log list will record a Bookmark of the Playback. See Section 4.1.10

10.2 System


LogViewer-03312011
File Type Option
Refresh Event System Login Network POS print filter
log03312011
Time Event Mode Information
03/31/2011 16:00:00.601 DVR Search Program Start Local Information
03/31/2011 15:48:19.470 DVR Main Program Exit Local Information
03/31/2011 15:48:19.470 Device Unload Local Information
03/31/2011 15:48:18.732 PlugIn Unload Local Information
03/31/2011 15:48:18.214 Network Service Stop Local Information
03/31/2011 15:48:17.919 DVR Viewer Program Exit Local Information
03/31/2011 15:48:13.668 DVR Search Program Exit Local Information
03/31/2011 15:44:43.373 DVR Search Program Start Local Information
03/31/2011 14:57:19.650 PlugIn Load Local Information
03/31/2011 14:57:19.644 Start Monitor Local Information
03/31/2011 14:57:15.991 Video Initialize Local Information
03/31/2011 14:57:15.773 PlugIn Unload Local Information
03/31/2011 14:57:15.744 Service Restart Local Information
03/31/2011 14:57:15.734 Set Values Local Information
03/31/2011 14:28:22.114 Changing Setup Local Information
03/31/2011 14:28:21.766 PlugIn Load Local Information
03/31/2011 14:28:21.759 Start Monitor Local Information
03/31/2011 14:28:18.171 Video Initialize Local Information
03/31/2011 14:28:17.968 PlugIn Unload Local Information
03/31/2011 14:28:17.939 Service Restart Local Information
03/31/2011 14:28:17.929 Set Values Local Information
03/31/2011 14:25:46.308 Changing Setup Local Information
03/31/2011 14:25:45.964 PlugIn Load Local Information
03/31/2011 14:25:45.957 Start Monitor Local Information
03/31/2011 14:25:42.357 Video Initialize Local Information
03/31/2011 14:25:42.156 PlugIn Unload Local Information
03/31/2011 14:25:42.126 Service Restart Local Information
03/31/2011 14:25:42.114 Set Values Local Information
03/31/2011 14:18:17.083 Changing Setup Local Information
03/31/2011 14:18:16.805 PlugIn Load Local Information
03/31/2011 14:18:16.775 Start Monitor Local Information
03/31/2011 14:18:13.190 Video Initialize Local Information
03/31/2011 14:18:12.971 PlugIn Unload Local Information
03/31/2011 14:18:12.938 Service Restart Local Information
03/31/2011 14:18:12.918 Set Values Local Information
03/31/2011 14:13:37.013 Changing Setup Local Information
Ready

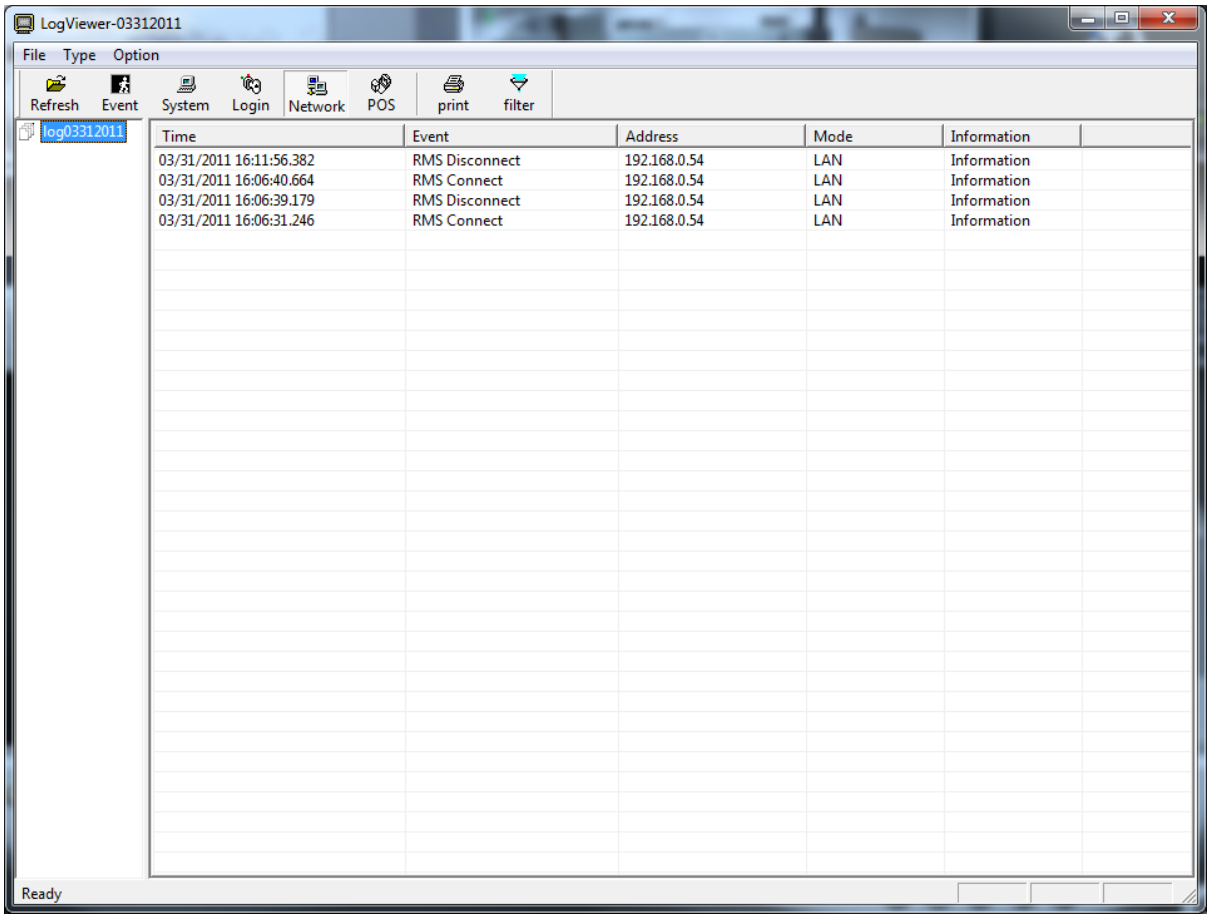
- *Time:* This column shows the time when the system event occurred.
- *Event:* The events tracked are as follows.
  - DVR Viewer Program Start, DVR Viewer Program Exit
  - DVR Main Program Start, DVR Main Program Exit
  - DVR Search Program Start, DVR Search Program Exit
  - And so on
- *Mode:* This column shows whether event was a local or remote event.
- *Information:* Display the reason for logging the event as follows.
  - *Information:* This shows information occurred.
  - *Warning:* This shows warning occurred.
  - *Error:* This shows error occurred.

10.3 Login


LogViewer-03312011
File Type Option
Refresh Event System Login Network POS print filter
log03312011
Time ProcessName User Login User Logout Status Mode
03/31/2011 16:00:02.295 DVR Search 1 Success Local
03/31/2011 15:50:16.044 DVR Backup 1 Success Local
03/31/2011 15:48:17.918 DVR Viewer 1 Success Local
03/31/2011 15:44:48.138 DVR Search 1 Success Local
03/31/2011 15:44:42.450 DVR Search 1 Success Local
03/31/2011 15:41:32.317 Setup 1 Success Local
03/31/2011 14:52:17.424 Setup 1 Success Local
03/31/2011 14:51:53.633 Setup 1 Success Local
03/31/2011 14:28:01.404 Setup 1 Success Local
03/31/2011 14:25:35.481 Setup 1 Success Local
03/31/2011 14:18:07.586 Setup 1 Success Local
03/31/2011 14:13:28.625 Setup 1 Success Local
03/31/2011 14:12:11.639 DVR Viewer 1 Success Local
03/31/2011 14:08:48.524 DVR Viewer 1 Success Local
03/31/2011 14:08:33.470 Setup 1 Success Local
03/31/2011 14:07:55.827 Setup 1 Success Local
03/31/2011 14:07:46.031 DVR Viewer 1 Success Local
Ready

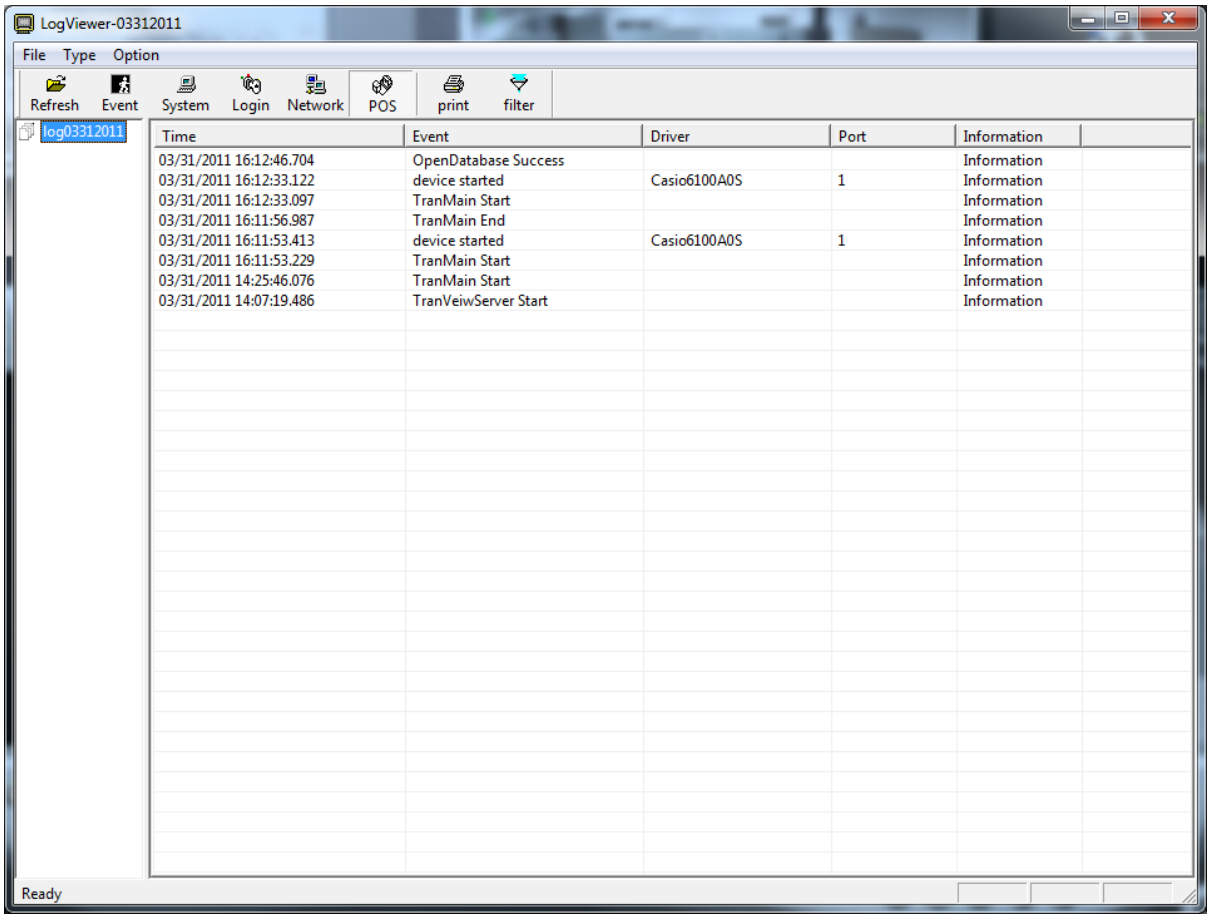
- *Time:* This column shows the time when the login event occurred.
- *Process Name:* Program Name
- *User Login:* This column shows the ID of the login user.
- *User Logout:* This column shows the ID of the logout user.
- *Status:* This column shows whether login or logout attempts were successful, or failed.
- *Mode:* This column shows whether the login was local or remote.

10.4 Network


LogViewer-03312011
File Type Option
Refresh Event System Login Network POS print filter
log03312011
Time Event Address Mode Information
03/31/2011 16:11:56.382 RMS Disconnect 192.168.0.54 LAN Information
03/31/2011 16:06:40.664 RMS Connect 192.168.0.54 LAN Information
03/31/2011 16:06:39.179 RMS Disconnect 192.168.0.54 LAN Information
03/31/2011 16:06:31.246 RMS Connect 192.168.0.54 LAN Information
Ready

- *Time:* This column shows the time when the network vent occurred.
- *Event:* This column shows whether RMS is connected or disconnected.
- *Address:* This column shows the IP Address of RMS connected.
- *Mode:* This column shows whether network event was local or remote.
- *Information:* Display the reason for logging the event as follows.
  - *Information:* This shows information occurred.
  - *Warning:* This shows warning occurred.
  - *Error:* This shows error occurred.

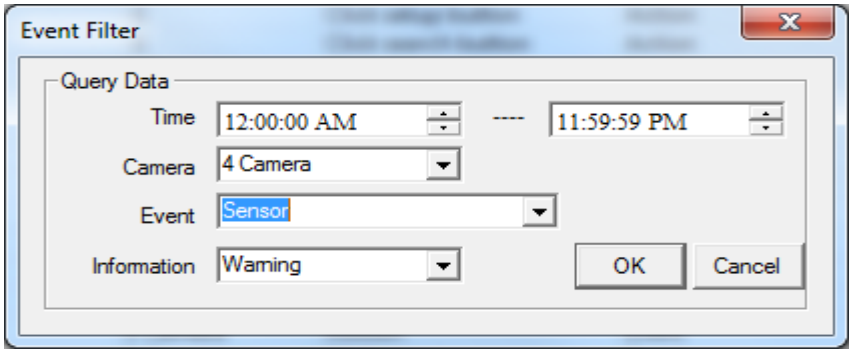
10.5 POS


LogViewer-03312011
File Type Option
Refresh Event System Login Network POS print filter
log03312011
Time Event Driver Port Information
03/31/2011 16:12:46.704 OpenDatabase Success Information
03/31/2011 16:12:33.122 device started Casio6100A0S 1 Information
03/31/2011 16:12:33.097 TranMain Start Information
03/31/2011 16:11:56.987 TranMain End Information
03/31/2011 16:11:53.413 device started Casio6100A0S 1 Information
03/31/2011 16:11:53.229 TranMain Start Information
03/31/2011 14:25:46.076 TranMain Start Information
03/31/2011 14:07:19.486 TranVeiwServer Start Information
Ready

- *Time:* This column shows the time when the POS event occurred.
- *Event:* The events tracked are as follows.
  - TranMain Start, TranMain Exit
  - OpenDatabase Success, OpenDatabase Fail
  - Device started
  - And so on
- *Driver:* This column shows the name of the driver loaded.
- *Port:* This column shows the port number associated with Driver.
- *Information:* Display the reason for logging the event as follows.
  - *Information:* This shows information occurred.
  - *Warning:* This shows warning occurred.
  - *Error:* This shows error occurred.

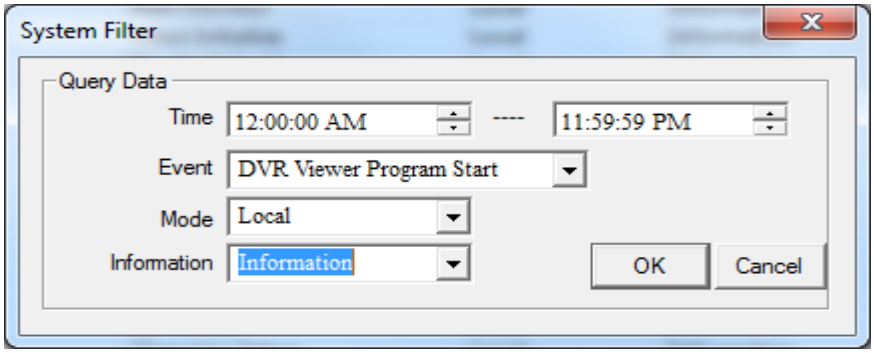
10.6 Filter

10.6.1 Event



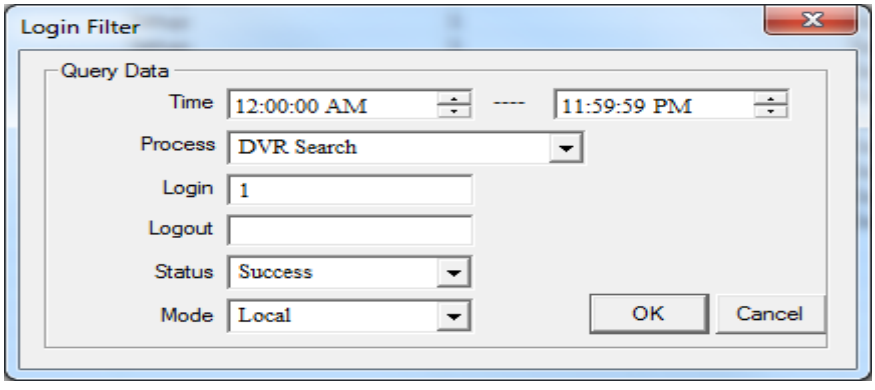
- *Time:* Select the start time and end time to search.
- *Camera:* Select the camera number to search.
- *Event:* Select the event to search.
- *Information:* Select the type to search.

10.6.2 System



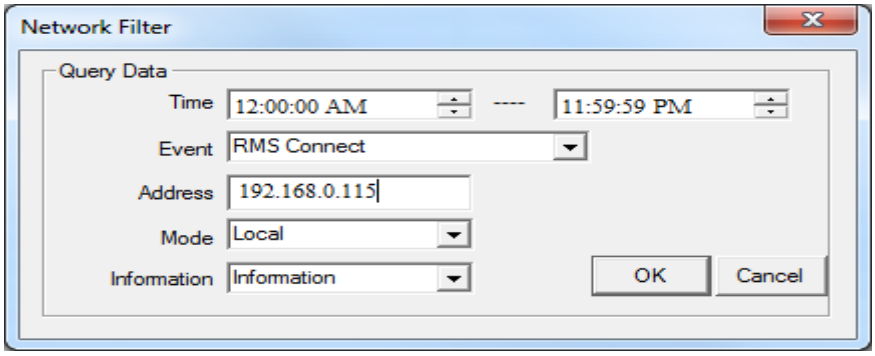
- *Time:* Select the start time and end time to search.
- *Event:* Select the event to search.
- *Mode:* Select the mode to search.
- *Information:* Select the type to search.

10.6.3 Login



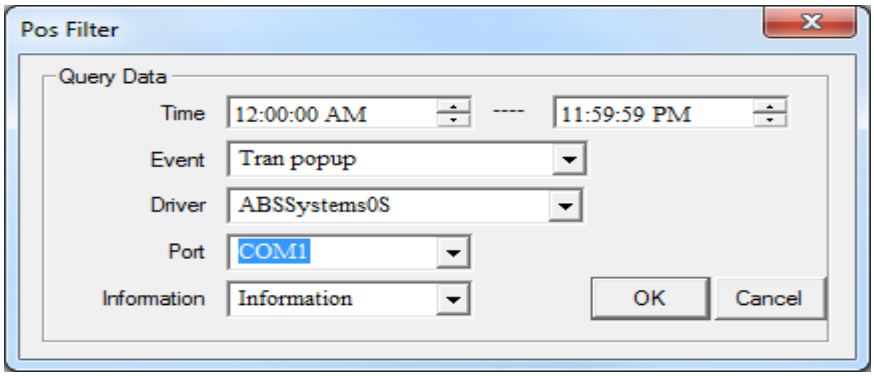
- *Time:* Select the start time and end time to search.
- *Progress:* Select the program name to search.
- *Login:* Select the Login ID to search.
- *Logout:* Select the Logout ID to search.
- *Status:* Select the status to search.
- *Mode:* Select the mode to search.

10.6.4 Network



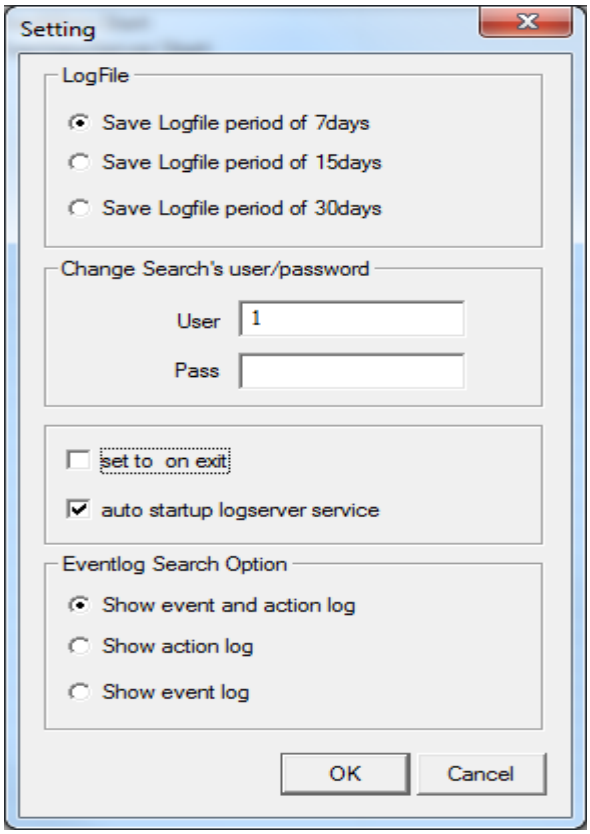
- *Time:* Select the start time and end time to search.
- *Event:* Select the event to search.
- *Address:* Type the IP Address of RMS to search.
- *Mode:* Select the mode to search.
- *Information:* Select the type to search.

10.6.5 POS



- *Time:* Select the start time and end time to search.
- *Event:* Select the event to search.
- *Driver:* Type the driver to search.
- *Port:* Select the port to search.
- *Information:* Select the type to search.

10.7 Setup



- *LogFile:* Select the start time and end time to search.
  - *Save LogFile period of 7 days*
  - *Save LogFile period of 15 days*
  - *Save LogFile period of 30 days*
- *Change Search's user/password:* Type User and password required to run Search.exe
- *Set to tray icon on exit*: If you check this, the program will minimize to the tray icon on exit.
- *Auto startup Logserver service:* If you uncheck this, you must run the LogServer.exe manually (not recommended).
- *Eventlog Search Option*
  - *Show event and action log*
  - *Show event log*
  - *Show action log*

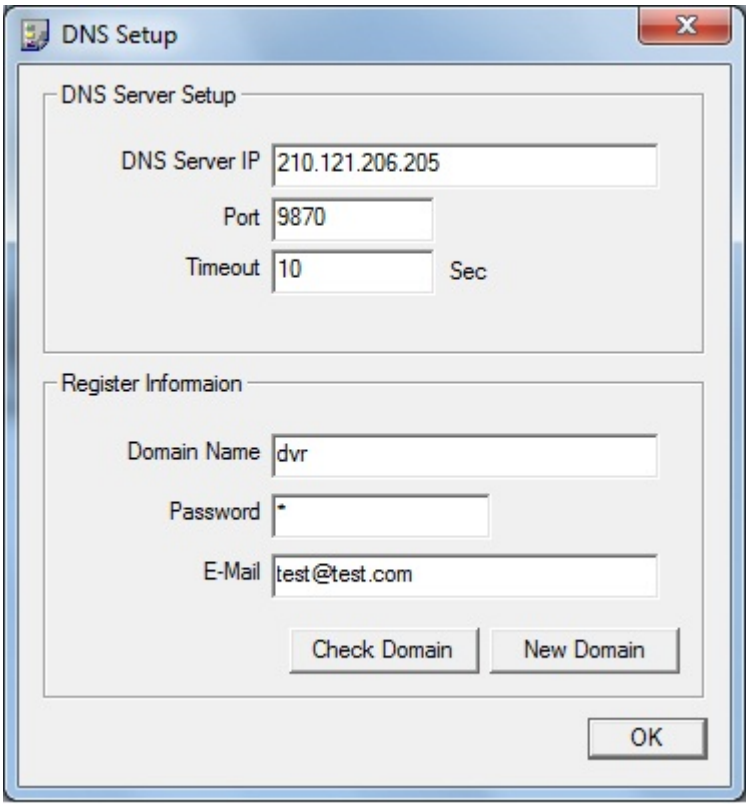
11 DNS Service

11.1 DNS Client Setup

The DNS Service allows a DVR with a dynamic IP address to be accessed from a remote location. The DVR communicates with a DNS server, sharing its location on the internet, and then the remote location can ask the DNS server where the DVR is located and create a handshake. Once the handshake is created, the DNS server drops out of the communication. Follow these directions to initiate the DNS service. (Note: You may have to get the DNS Server IP address from your dealer.)

Run the DNSClient.exe in C:\Program Files \DVR\Main, or under Start/Programs/DVR/Main/DNS Client Setting

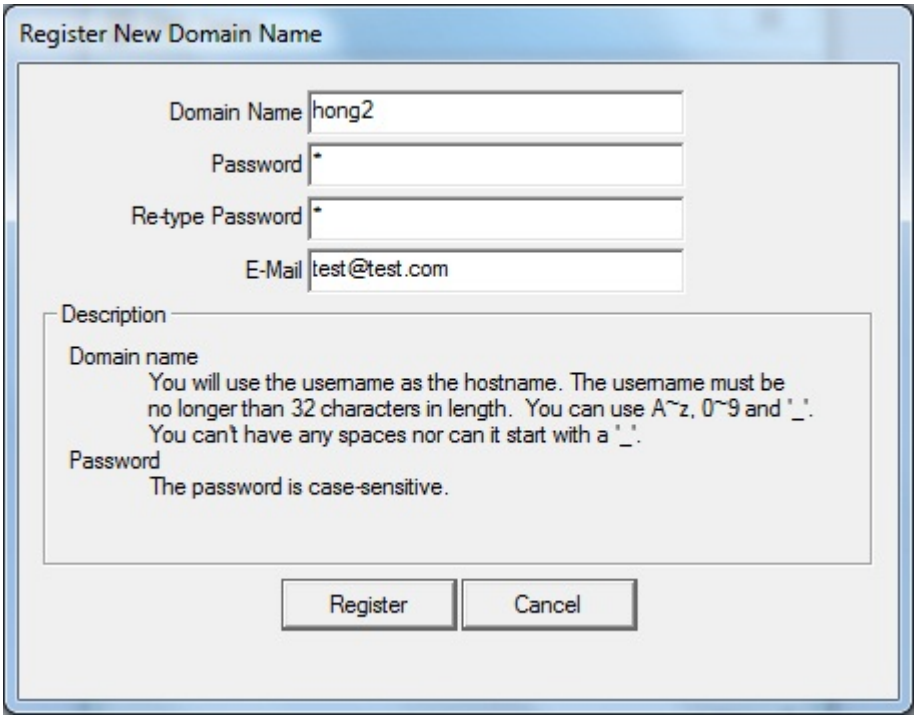
- DNS Server Setup



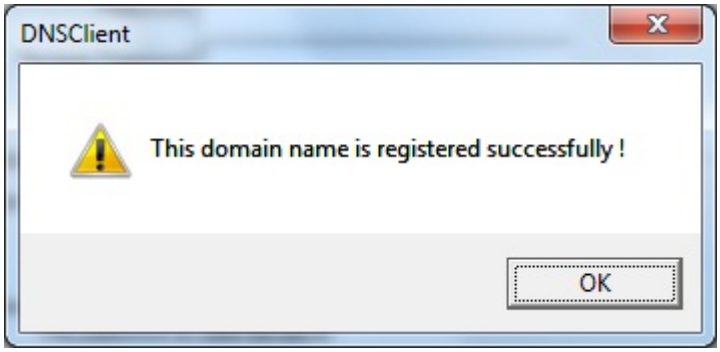
- *DNS Server IP:* Insert DNS server IP (use 210.121.206.205, or another if supplied by your dealer).
- *Port:* Insert Port Number (Default is 9870)
- *Time Out:* Maximum waiting time for connecting with the server.

- Register Information

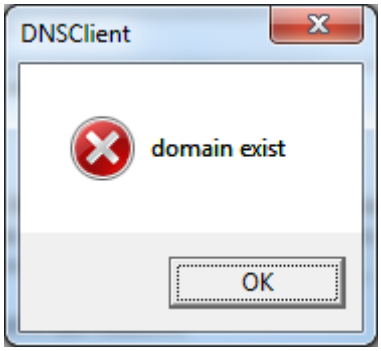
  - *Domain name:* Insert a chosen Domain Name (can be anything, but less than 32 characters.
  - *Password:* Create a password
  - *E-Mail:* Insert and email address (for sending alarm event notification, if used).
  - *New Domain button:* Click to register a new domain name on the DNS Server.


Register New Domain Name
Domain Name
hong2
Password
Re-type Password
E-Mail
test@test.com
Description
Domain name
You will use the username as the hostname. The username must be no longer than 32 characters in length. You can use A~z, 0~9 and '_'. You can't have any spaces nor can it start with a '_'.
Password
The password is case-sensitive.
Register
Cancel

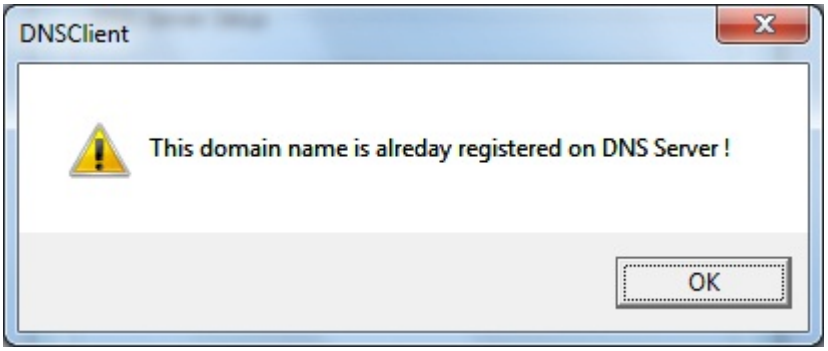
After completing the required information, click “Register”. If your on-line register is successful, following window will show up.



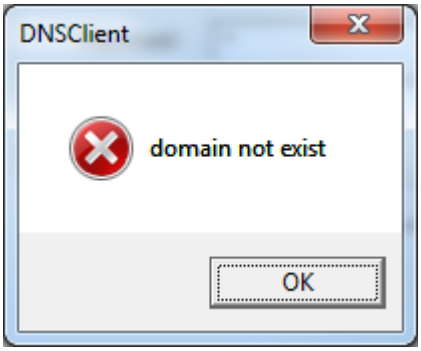
If your domain name is already registered on the DNS server, following window will be appear. You must then use a different new domain name.



- *Check Domain button:* Used to check if your domain name is registered on the DNS server or not.



Domain name is registered on the DNS server.



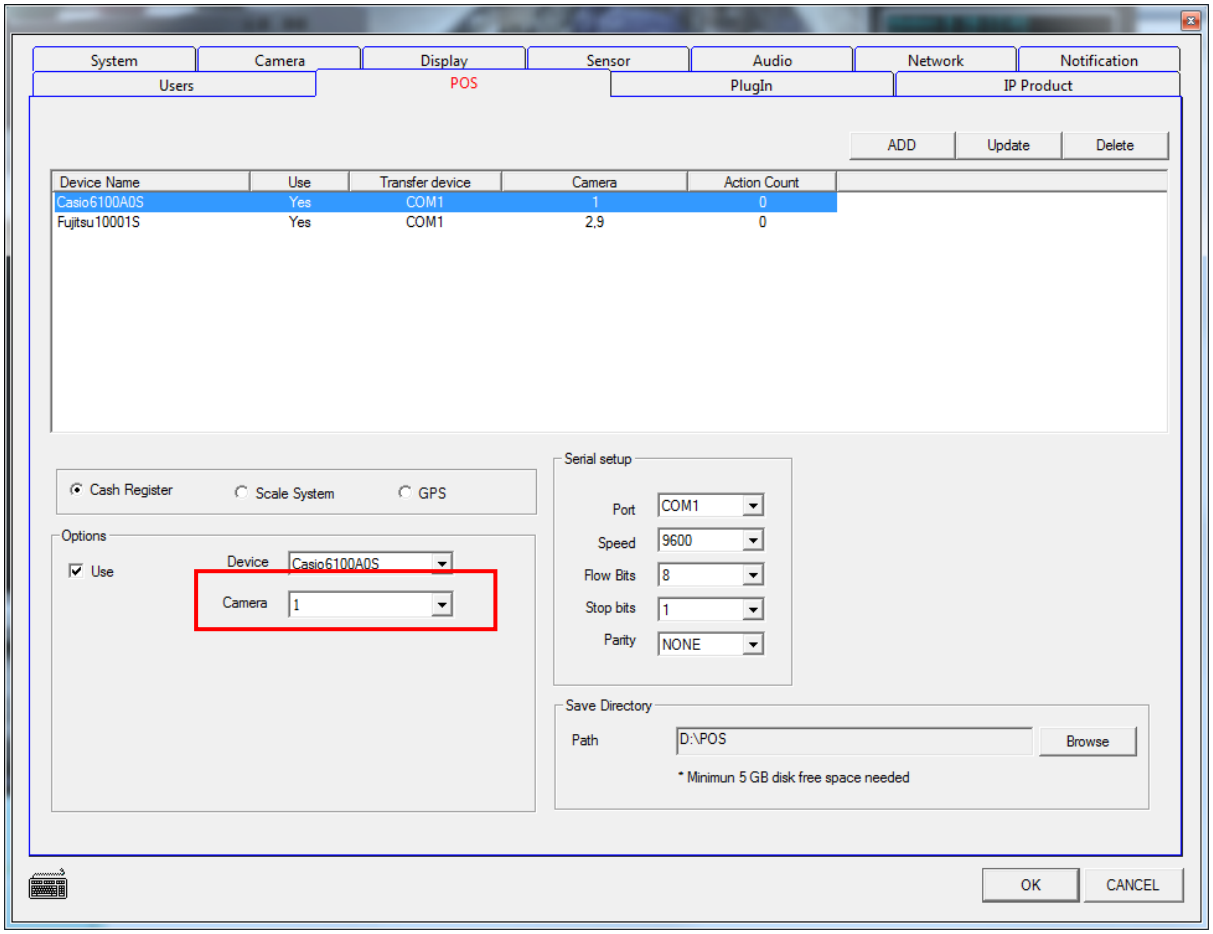
Domain name is not registered on the DNS server.

Chapter 2

POS

1. Type of POS

1.1 Single Serial Cash Register

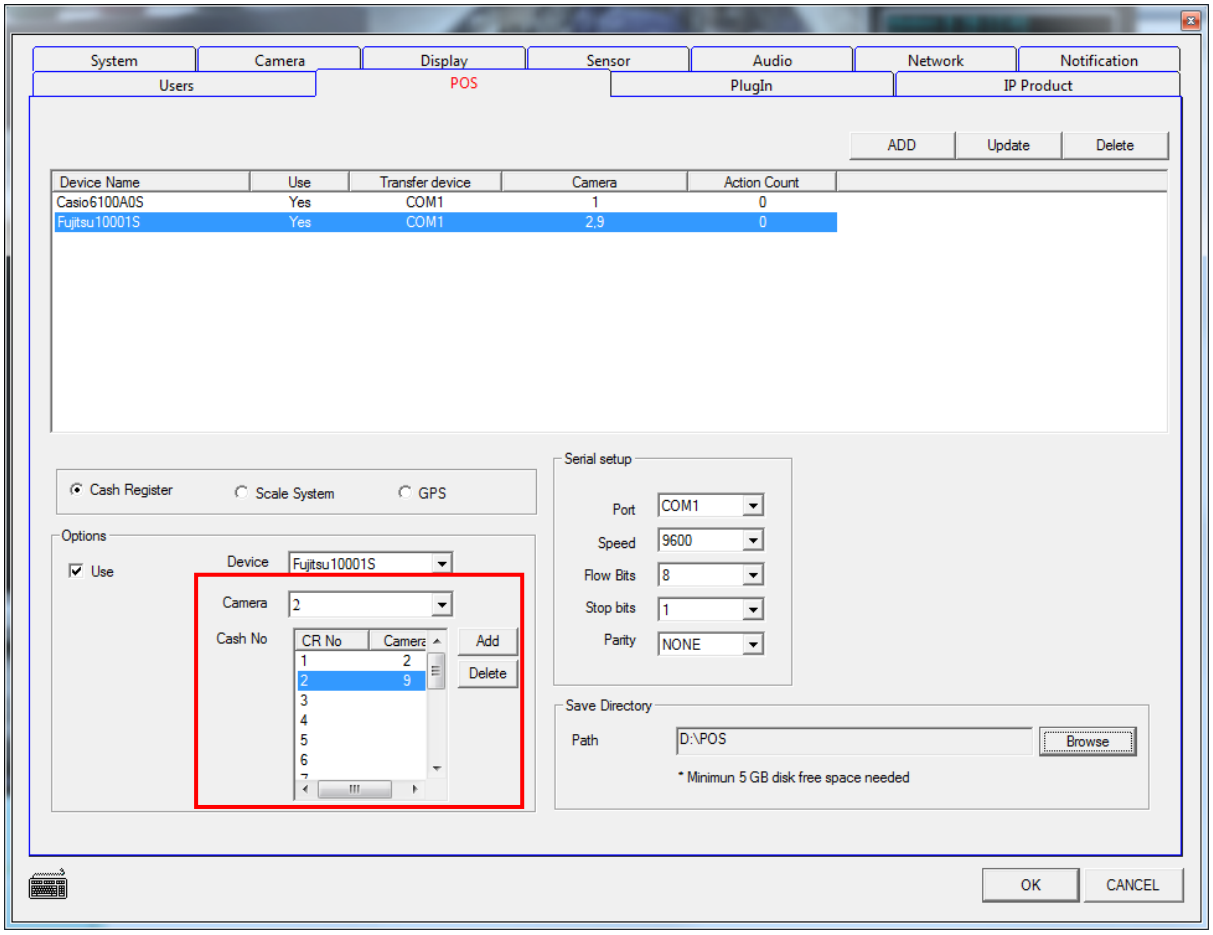


Main Dialog displays the Serial port configurations.

- Add: Add the selected Cash Register.
- Update: Update the selected Cash Register.
- Delete: Delete the selected Cash Register.
- Options
  - *Use:* Check the “Use” option if you want to use a device.
  - *Device:* Set the cash register type (i.e., Casio610001)
  - *Camera:* Set camera number to associate with the cash register.
- Action Count: Number of transactions or exceptions associated with the register

- Serial Setup
  - *Port:* Choose a COM Port
  - *Speed:* Set the communication baud rate (9600 = default)
  - *Flow Bits:* (8 = default)
  - *Stop Bits:* (1 = default)
  - *Parity:* (NONE = default)
- Save Directory: Set the POS database path to save the POS transactions. Ensure there is enough disk space. If you use under 16 registers, a minimum of 3GB should be allocated. If you use 16 registers, minimum 5GB disk space is needed.

1.2 Multi Serial Cash Register



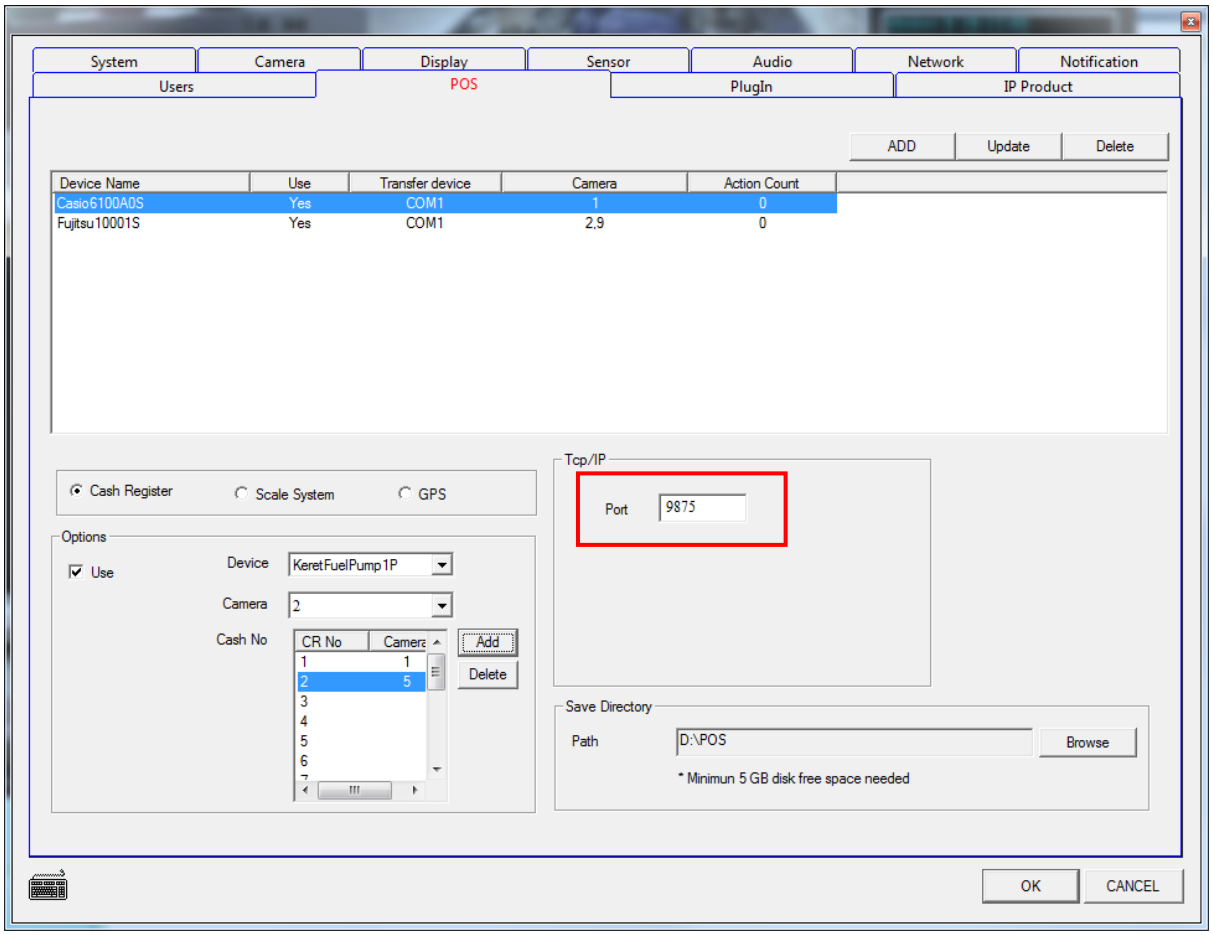
Main Dialog displays the Serial port configurations.

- Add: Add the selected Cash Register.
- Update: Update the selected Cash Register.
- Delete: Delete the selected Cash Register.
- Options
  - *Use:* Check the “Use” option if you want to use a device.
  - *Device:* Set the cash register type (i.e., Fuijits1S)
  - *Camera:* Set camera number to associate with the cash register.
- Action Count: Number of transactions or exceptions associated with the register
- Serial Setup
  - *Port:* Choose Port(these ports have to differ per cash register. Support up to max 16)
  - *Speed:* Set the communication baud rate (9600 = default)

- *Flow Bits:* (8 = default)
- *Stop Bits:* (1 = default)
- *Parity:* (NONE = default)

- Save Directory: Set the POS database path to save the POS transactions. Ensure there is enough disk space If you use under 16 registers, a minimum of 3GB should be allocated. If you use 16 registers, minimum 5GB disk space is needed.

1.3 Multi TCP Cash Register

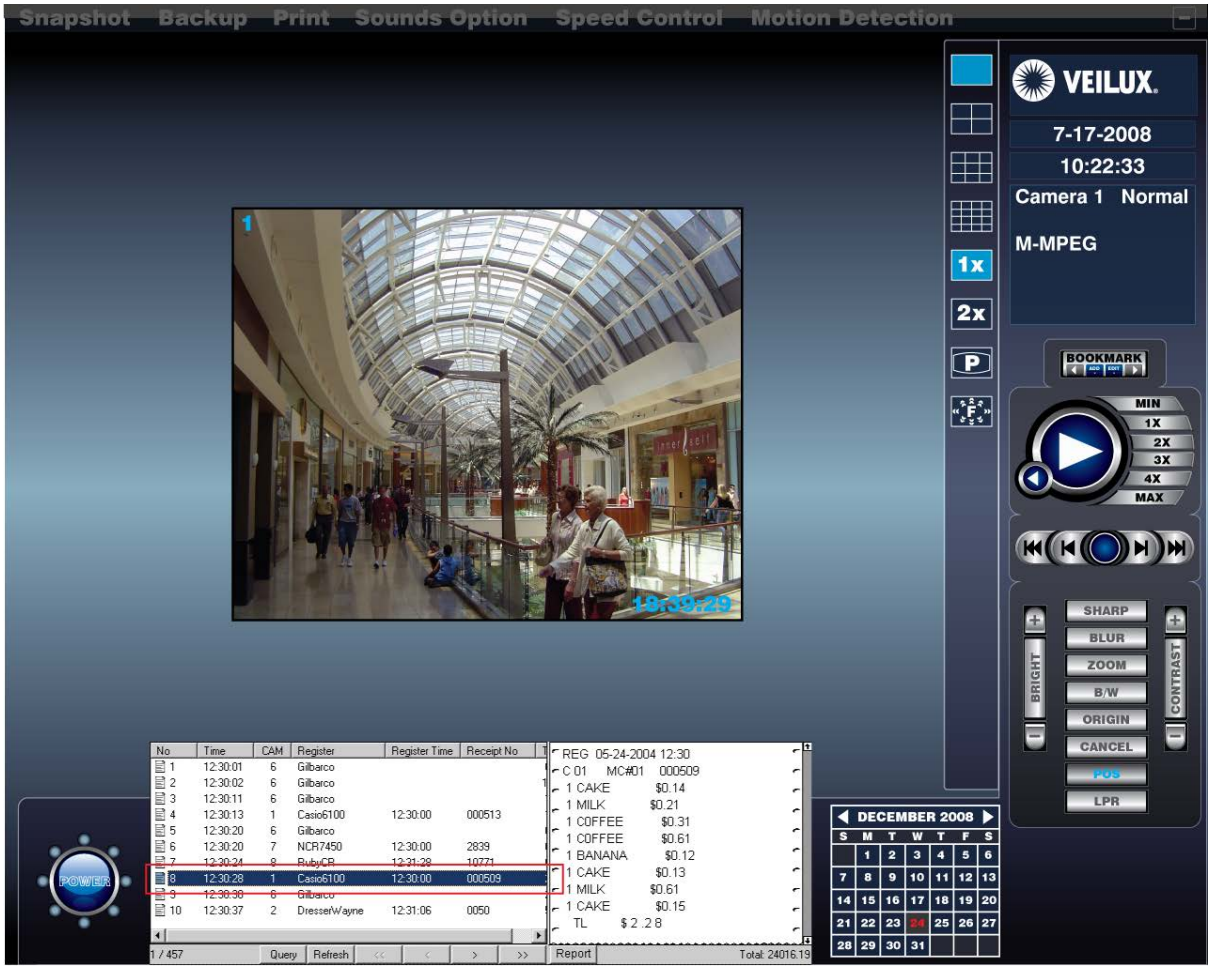


Main Dialog displays the TCP/IP port configurations.

- Add: Add the selected Cash Register.
- Update: Update the selected Cash Register.
- Delete: Delete the selected Cash Register.
- Options
  - *Use:* Check the “Use” option if you want to use a device.
  - Device: Set the cash register type (i.e., Fuijits1S)
  - *Camera:* Set camera number to associate with the cash register.
- Action Count: Number of transactions or exceptions associated with the register
- TCP/IP
  - *Port:* Type Port no (except 9876)
  - *Save Directory:* Set the POS database path to save the POS transactions. Ensure there is enough disk space If you use under 16 registers, a minimum of 3GB should be allocated. If you use 16 registers, minimum 5GB disk space is needed.

2. POS Search

If you want to query all transaction listed for the selected day, use this button
Below is the display screen when you click the POS button.



If a user wants to see Video and Pos data embedded, click right button of the mouse, check “Show Pos Data” menu button. Basically Video data is only displayed, Pos data is not overlayed.

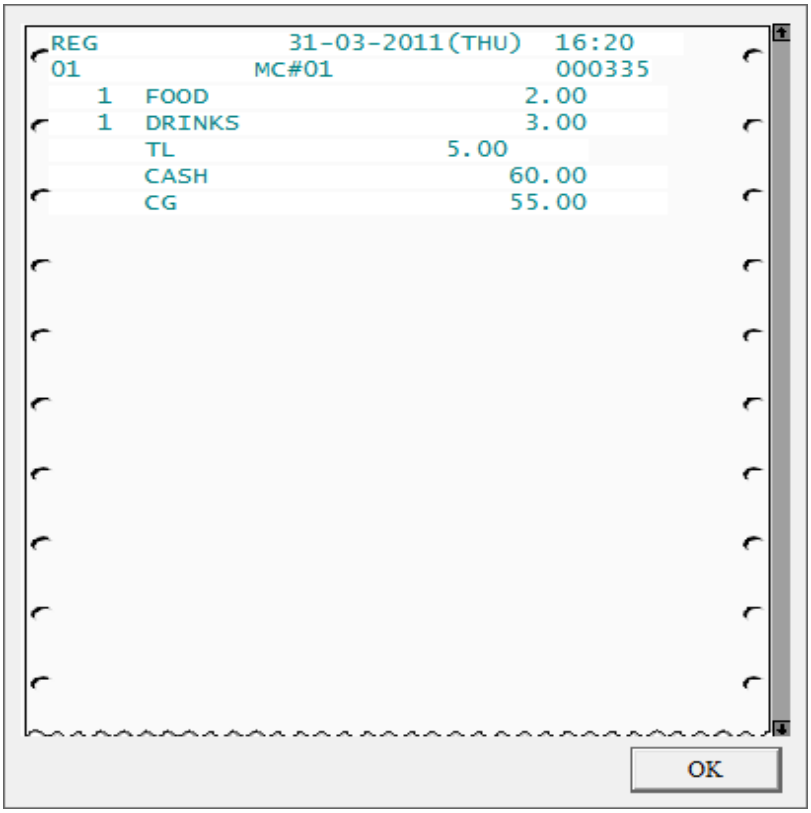
Transaction List Header meaning

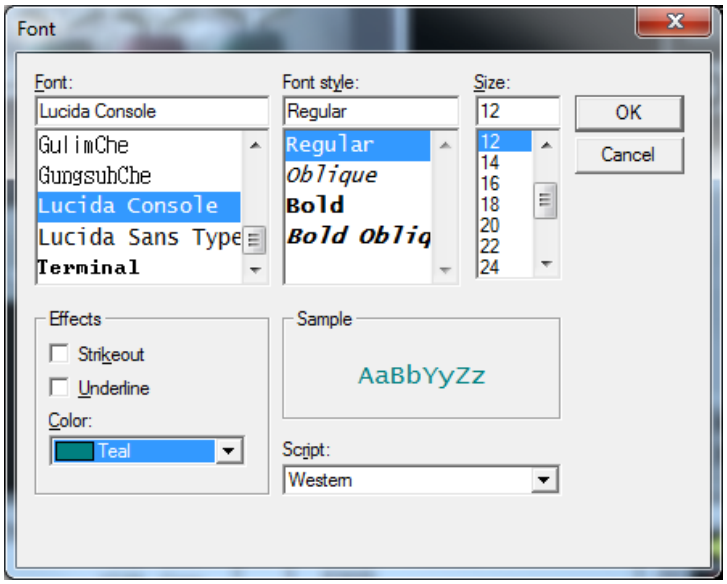
- No: Transaction list sequence Number
- Time: DVR’s save time of the transaction
- CAM: Camera Number
- Register: Cash Register Type
- Register Time: Cash Register Time (Most registers)
- Receipt No: Cash Register Receipt Number (Most registers)
- Total: Total Price per transaction

- <<: Move to the first page
- <: Move to the previous page
- >: Move to the next page.
- >>: Move to the last page
- Query: Define specific searches
- Report: Show the statistical graph
- Print: It will print a displayed receipt.

- Popup: Show an enlarged receipt data
- Font: Change font, font size and/or color
- Refresh: If you requery the transaction list, use the “Refresh” button.

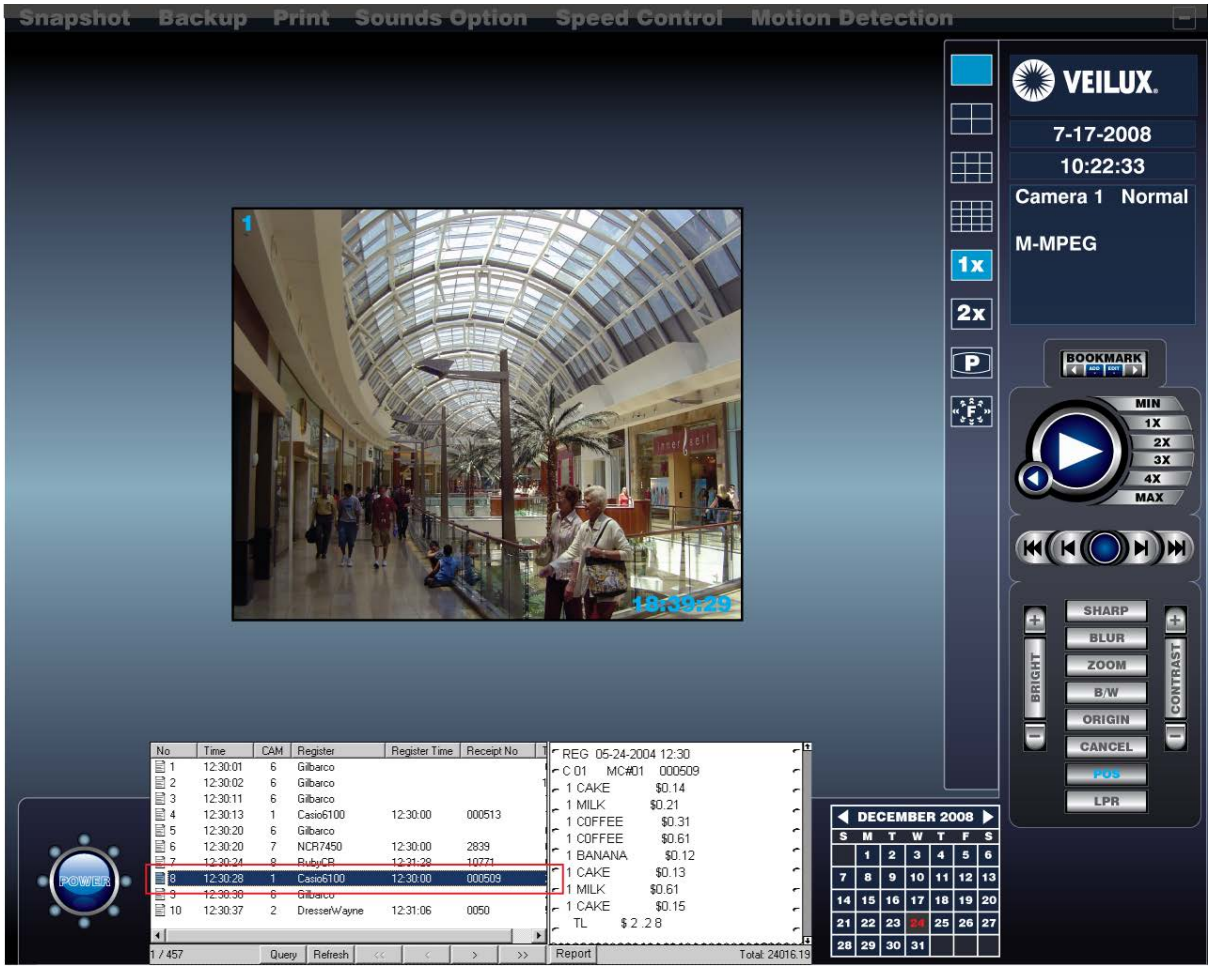
If you click the Transaction list, the popup dialog displays the original receipt data.
When you click the Play button, you can see the text on the video of the selected transaction.





Query: If you want to extend search, click this button

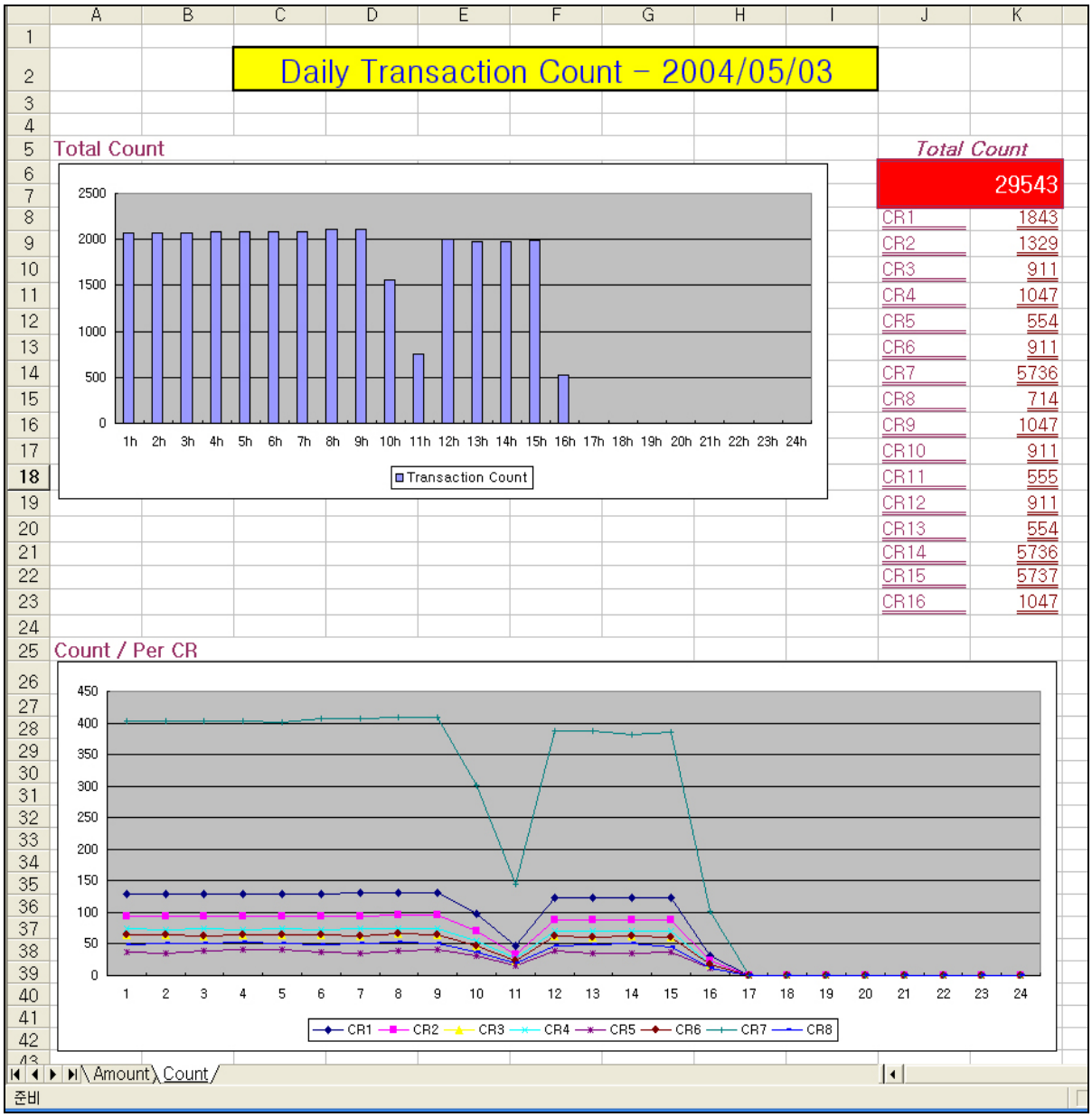
Below is the display screen when you click the Query button.



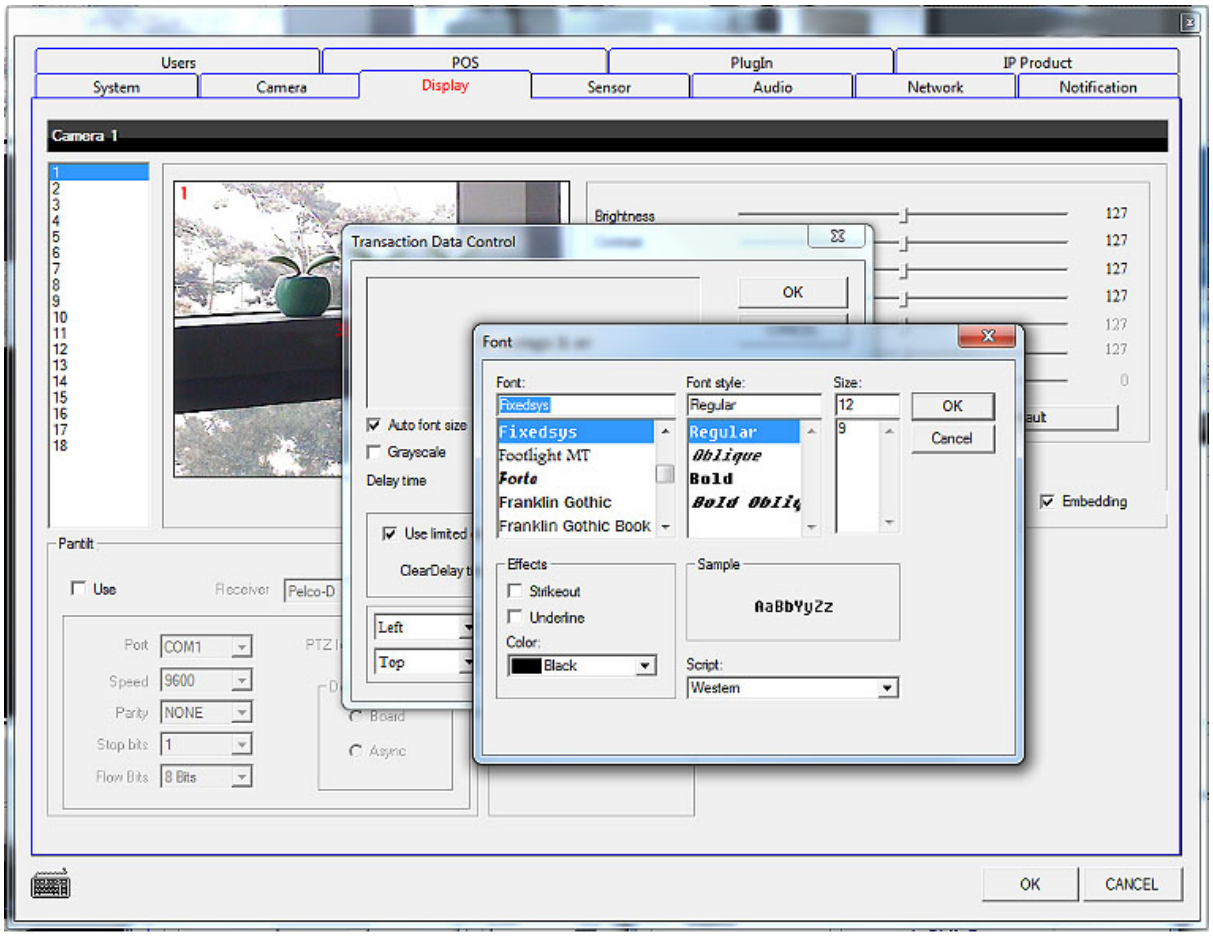
- Start Day & Time: Choose start day & time
- End Day & Time: Choose end day & time
- Camera: Choose camera number
- Item: Edit the Item to search
- Code: Choose the Action Code to search
- Value: Set a Value for the Search
- Query: Execute the Search

Report: If you want to see statistical graph, click the “Report” button.

The DVR or remote computer must have Microsoft Excel installed for this feature to work.



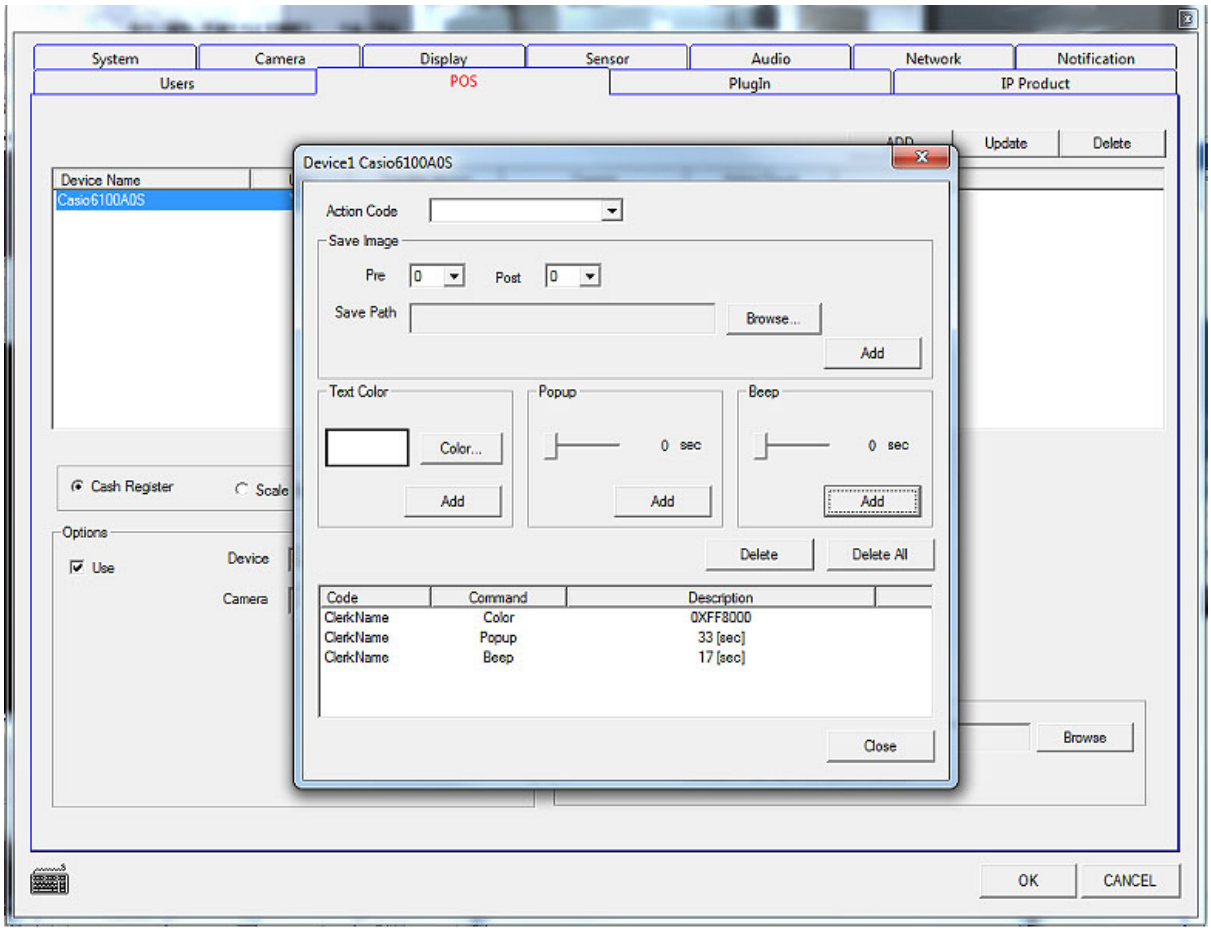
3. Font Setting



You can change the size and type of the font to make the text easier to see.
Use the Display tab in the Setting Menu, then choose Transaction Data Control to change the font.

4. Action Code Setting

When user double-clicks Item of the list control, the Action Code Window will be displayed as follows.



- *Action Code:* Select an action code to define an exception for certain transactions
- *Pre:* Set the pre-recording frames when the action code is activated.
- *Post:* Set the post-recording frames when the action code is activated..
- *Save Path:* Designate the folder name to save the Pre/Post images.
- *Text Color:* Set the color for the register text during the designated action code.
- *Popup:* If the action code is activated, the corresponding camera pops up.
- *Interval:* 1~100 sec
- *Beep:* If the action code is activated, the system will make an audible alert.

4.1. Add User defined Action Code

You can add user defined Action Codes for specific needs.
Action codes can be defined in actioncode.ini file in the c:\program files\DVR\Main\drivers directory.
Open the actioncode.ini file, and add the new action codes in the [USER ACTIONCODE] section.

User defined action code format is

ACTIONCODE=ACTIONNAME,ACTIONSTRING

ACTIONCODE : 2byte string from 01~99, It is a unique code by used by program internally.
ACTIONNAME : It a display name of action code located in the combo box of Search Program.

ACTIONSTRING : It a string shown in the receipt data

Example1) Add New ActionCode.
You can add New action code from 01 ~ 99

[USER ACTIONCODE]
01=AccessOK,Access Granted

In this case “Acces Granted” shown in the data, treated as Actioncode 01 and it’s display name is “AccessOK”

Example2) Update Exsiting ActionCode
You can modify existing ActionCode.
In this case you can write the code in the [POS ACTIONCODE] or [SCALE ACTIONCODE]

[USER ACTIONCODE]
AM=Cash,Cash Amount

In this case AM predefined POS Actioncode is redefined with the string you want.

Example3) Define same ActionCode with different string.

[USER ACTIONCODE]
01=AccessOK,Access Granted
01=AccessOK,Door is Opened
02=AccessFail,Door is Closed
AM=Cash,Cash Amount
03=DoorUsed,Door Used

In this case, “Access Granted” and “Door is Opened” are treated as same action code 01.

Chapter 3. NVR

1. NVR Setting

1.1 Activate NVR

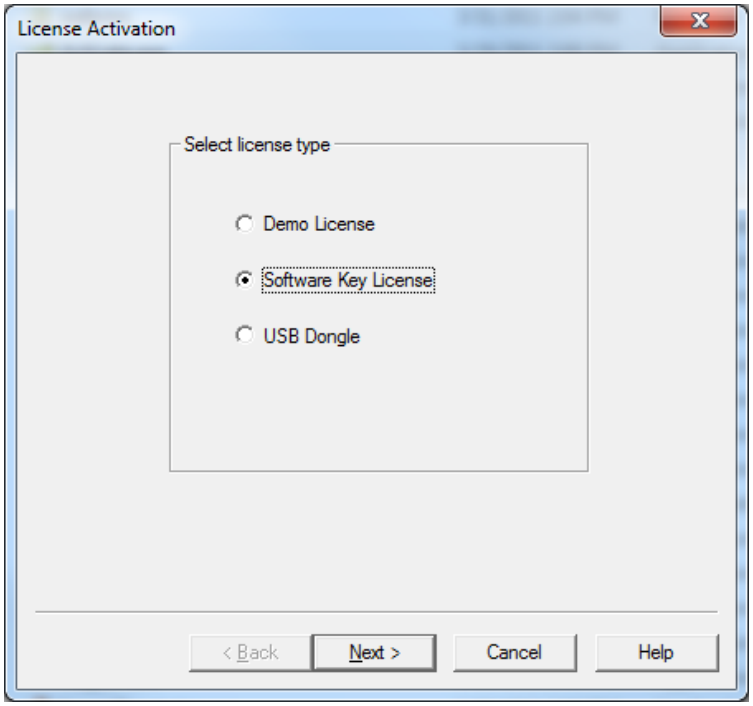
After installation of NVR, you have to activate the NVR with the license key if you don't use capture card or DIP/DIC series/IP100 product. If you don't activate, NVR will run as demo version. (only 30 days available).

To activate NVR choose the C:\Program Files\DVR\main\Activate.exe

1.2 How to register License Code

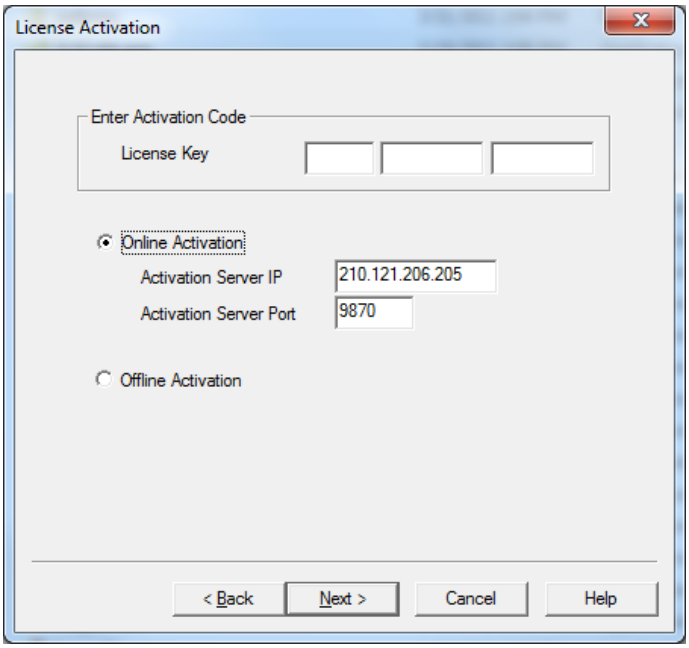
After installation of NVR software, you have to activate the NVR software with the license key. If you don't activate, NVR software will run as demo version.

To activate NVR choose the C:\Program Files\DVR\Main\Activate.exe



- *Select License type:*
  - *Demo License:* 30 days free license, 16ch cameras connection allowed.
  - *Software Key License:* Enter License key from us, and authenticate it with our server. It's possible using on/off line.
  - *USB Dongle:* USB hardware key lock controls the license.

- *Software Key License*



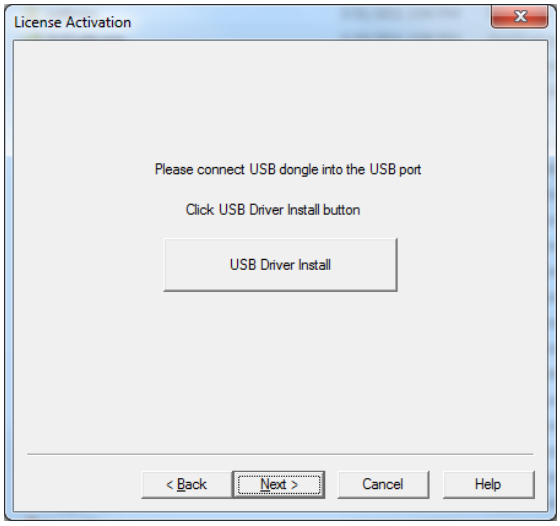
- Enter Activation Code:
  - *License Key:* Enter License key from us.

- Online Activation:
  - *Activation Server IP & Activation Server Port:* They are information to activate NVR via Online. They are IP address & Port of Veilux License Server and default values. Users don't need to change them.

- Offline Activation:

  If your CMS server is not connected to internet, choose Offline Activation. And save the information in the files, and send the files to us. We will check the files and then send the license aut. file to you. You should copy the license aut. file into the C:\Program Files\DVR\Main directory.

- USB Dongle



Setup
1. Connect USB Dongle into the USB port,
2. Click Continue Anyway on the following dialog
Hardware Installation
The software you are installing for this hardware:
DAE-A USB Lock
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation
OK

If you choose USB Dongle, you have to install the USB driver first.
Plug the USB dongle into your system, and then click USB Driver Install button. Right Dialog Inform you to choose “Continue Anyway” button if Windows OS ask to install the DAE USB Lock driver.
If USB Driver installed successfully, Click Next, and license information will be displayed.

1.3 Backup License File

When you remove the system OS or the NVR Software, you have to backup the license aut. file (C:\Program Files\DVR\Main directory).

And after re-setup the system, copy the backup file into the original directory (C:\Program Files\DVR\Main directory). And then you can use NVR again with license. But if you didn’t backup the license aut. file you have to reactivate NVR (See above 1.1.)

License aut. file have information about system network card. So, if you change your network card, you have to reactivate NVR (See above 1.1.)

Chapter 4

VCA(Option)

1. VCA Overview

DVR provides the real-time video analytics. At the core of the product is an advanced object tracking engine that continually tracks moving and stationary targets.

We provides 2 types of VCA products:

- ***VCApresence:*** Continually tracks moving and stationary targets and generates real-time alerts of object presence in multiple overlapping detection zones.
- ***VCAsurveillance:*** Continually tracks and classifies moving and stationary targets and features a full suite of rule-based filters including. Multiple filters are supported on any combination of multiple overlapping detection zones.
- ***VCAcounting:*** Events occur when size-defined objects pass through defined zone or lane.

Capture(including Pro) card support VCA and IP products that's name ends with 'V' (ex DIP100V) support VCA too.

2. VCA Activate

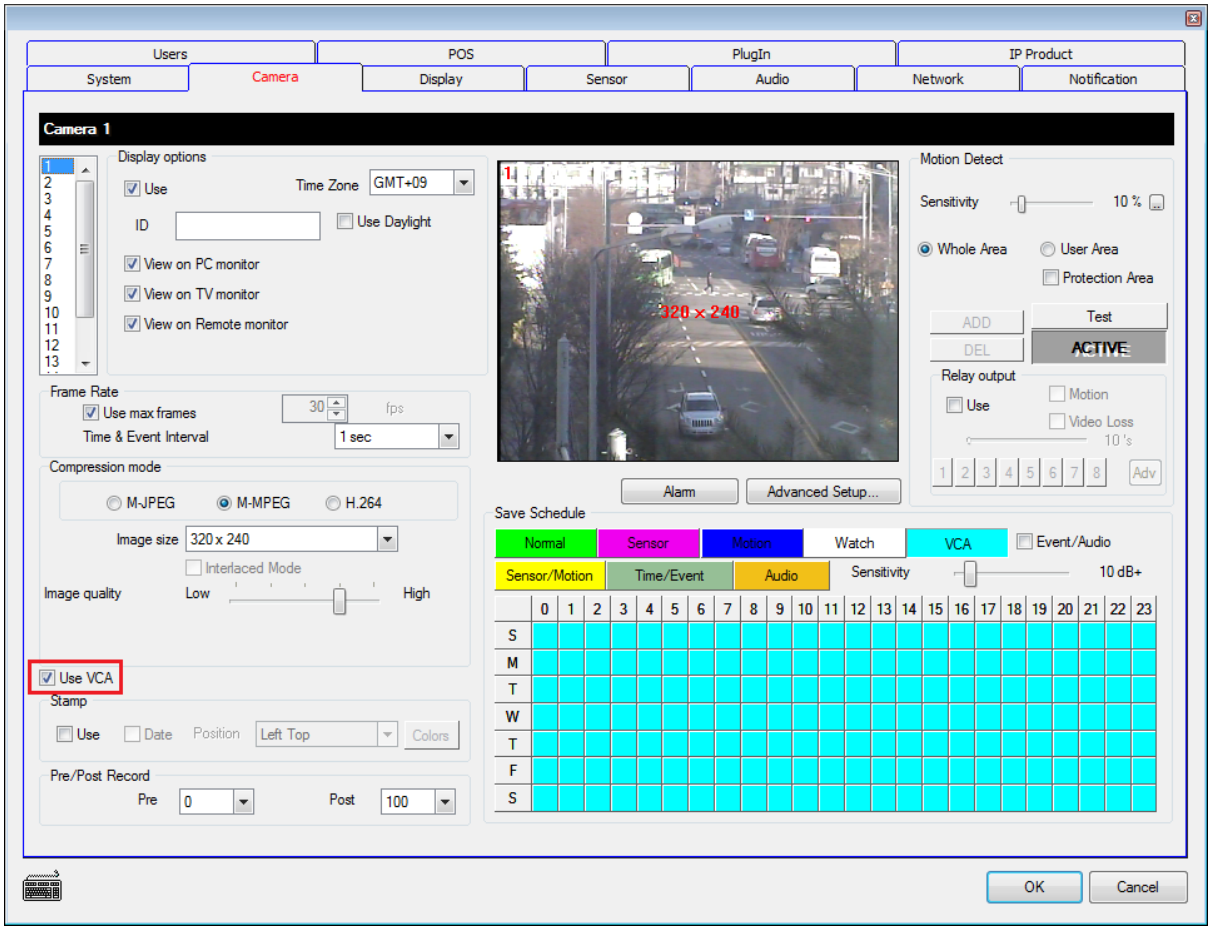
Before VCA can be enabled, it must be activated.

- ***Capture card (including Pro type):*** We provide License.VCA file in the installation CD. Copy that file into the DVR main directory.(ex: C:\Program files\DVR\Main directory). If you copy that file VCA runs as VCA surveillance mode, otherwise VCA runs as VCA Presence mode.
- ***IP products:*** There is no need to activate the VCA. IP products run as surveillance mode automatically.

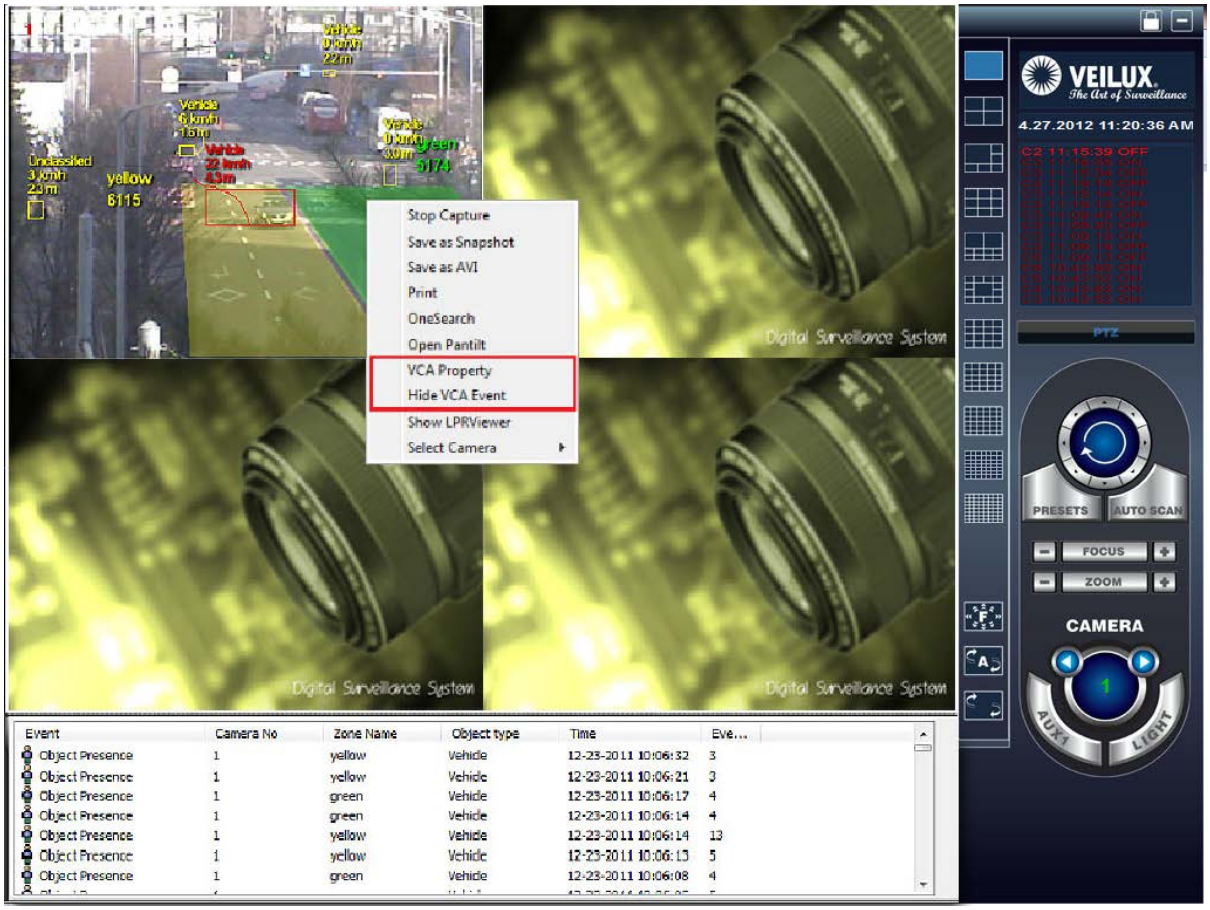
3. VCA Setup

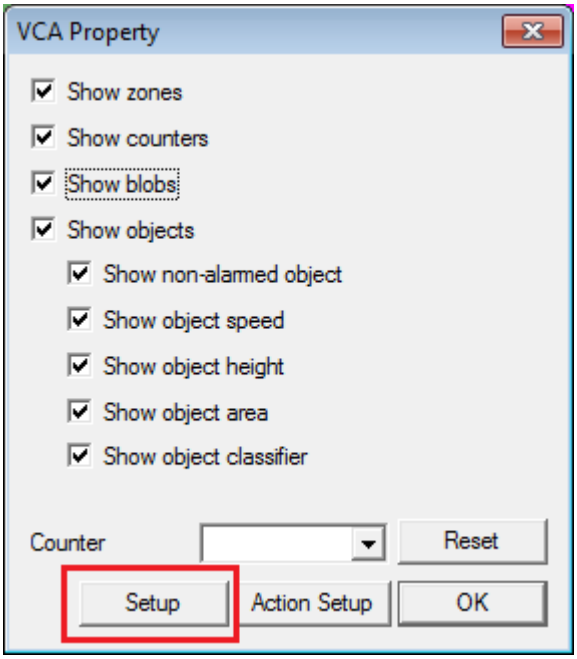
3.1. Camera Setup

Firstly, Display VCA check box should be checked to enable the VCA functions.



After setup, DVR viewer displays the VCA event viewer at the bottom.
Using Mouse context menu you can use VCA menus.





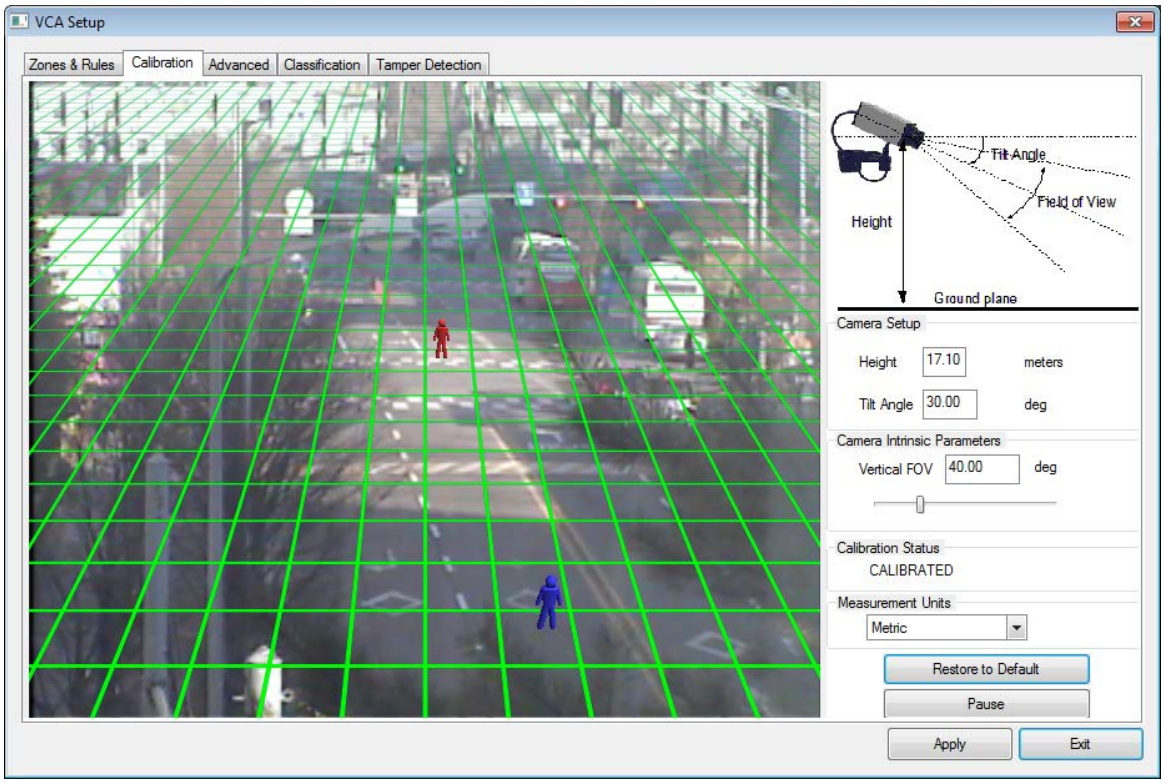
To setup VCA, click VCA Property, and then click Setup button.

In IP product case, VCA setup page is showed on webpage. (See section 4.7 about webpage setup)

3.2. Calibration

In order to estimate object parameters such as height, speed, area and classification, the camera must first be calibrated. Camera calibration involves establishing a reference to the ground plane in the scene.

To calibrate the camera for the scene, select the Calibration setup page:



Step 1: Find some people in the scene

Find some people or some people-sized objects in the scene. Try to find a person near the camera, and a person further away from the camera. Place the mimics on top of or near the people.

Step 2: Adjust tilt angle and height

Now, adjust the camera tilt angle and the camera height until the mimics are approximately the same size as the people in the scene. To adjust the tilt angle, click and drag the ground plane with the left mouse button. To adjust the camera height, scroll the mouse wheel up and down.

Step 3: Verify the setup

Once you are happy that the scene is correctly calibrated, verify the settings by dragging the mimics around and comparing them to other people or people-sized objects in the scene. The more locations in the scene where the calibration is verified, the more accurate the calibration will be.

The tilt angle and camera height can be fine-tuned in the same way as detailed in Step 2.

Vertical FOV

The vertical field of view is required when calibrating a camera. If you know the vertical field of view of the camera it can be entered directly. If however, you don't know the vertical field of view, it can be determined from the following table, given the vertical image dimension and its focal length:

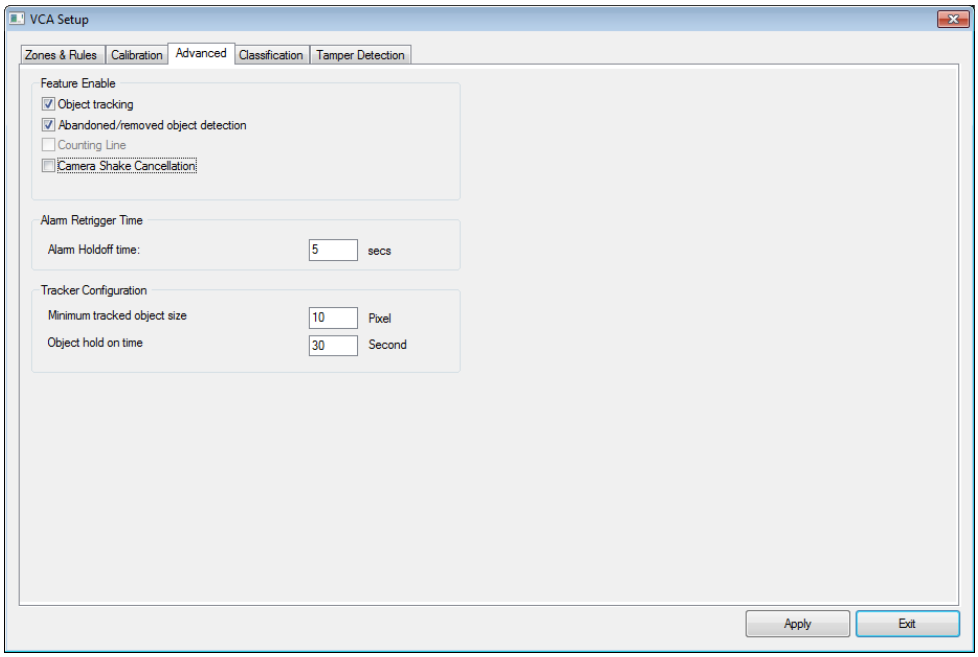
Image Format (in)	Vertical Image Dimension (mm)	1	1.2	1.4	1.6	1.8	2	2.2	2.4
1/4"	2.4	100.39	90.00	81.20	73.74	67.38	61.93	57.22	53.13
1/3"	3.6	121.89	112.62	104.25	96.73	90.00	83.97	78.58	73.74
1/1.8"	5.32	138.79	131.44	124.48	117.95	111.83	106.12	100.81	95.88

		Focal length (mm)										
Image Format (in)	Vertical Image Dimension (mm)	2.6	2.8	3	4	6	10	15	20	30	40	50
1/4"	2.4	49.55	46.40	43.60	33.40	22.62	13.69	9.15	6.87	4.58	3.44	2.75
1/3"	3.6	69.39	65.47	61.93	48.46	33.40	20.41	13.69	10.29	6.87	5.15	4.12
1/1.8"	5.32	91.31	87.06	83.12	67.25	47.82	29.79	20.11	15.15	10.13	7.61	6.09

If you are unable to determine the vertical field of view for your camera from the above table, leave the field of view at its default setting, 40°.

Measurement Units: Choose Metric or Imperial

3.3. Advanced



Object tracking

When checked, it allows to available object detection and tracking.

Abandoned/removed object detection

Check/Uncheck to enable/disable abandoned/removed object detection. When checked, a background process to detect abandoned and removed objects is enabled.

Counting Line

Check/Uncheck to enable/disable the counting line functionality.

Camera Shake Compensation

The camera shake cancellation function is used to improve the VCA performance with shaking cameras. If your installation suffers from camera shake problems, enable this function to improve the VCA performance. If camera shake is not an issue in your installation, best performance will be achieved with this setting disabled.

Alarm retrigger Time

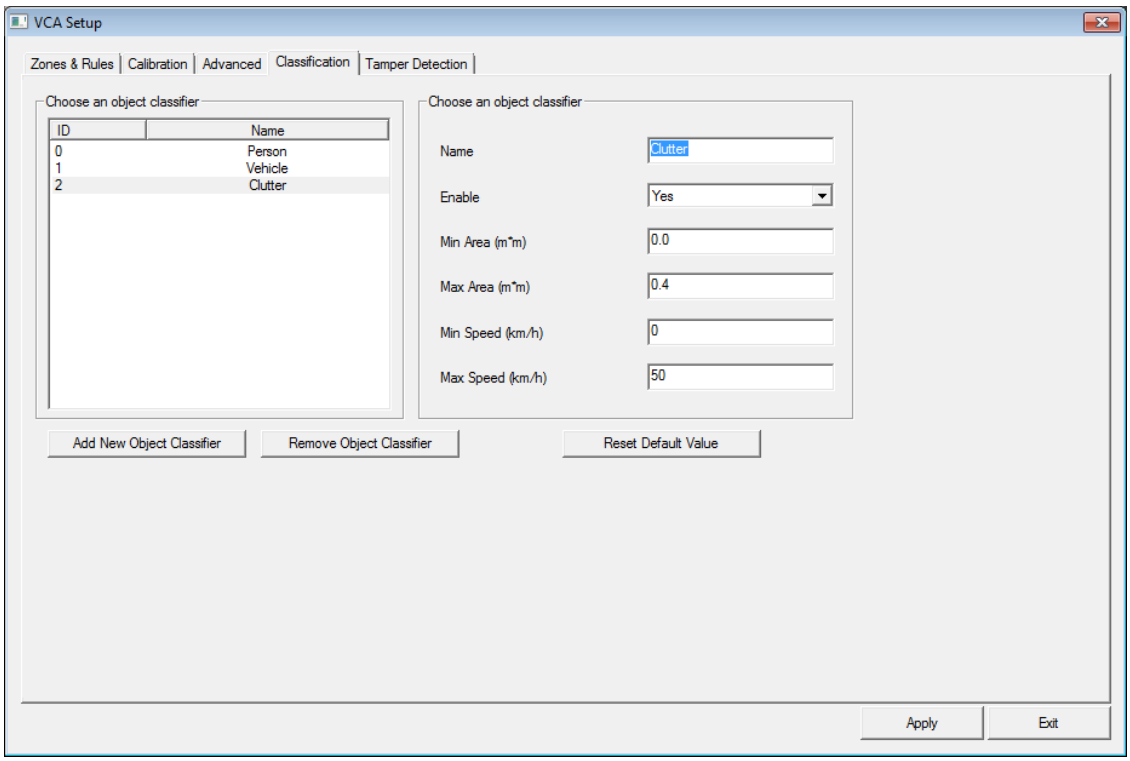
When event occurs, alarm is raised after user defined time.

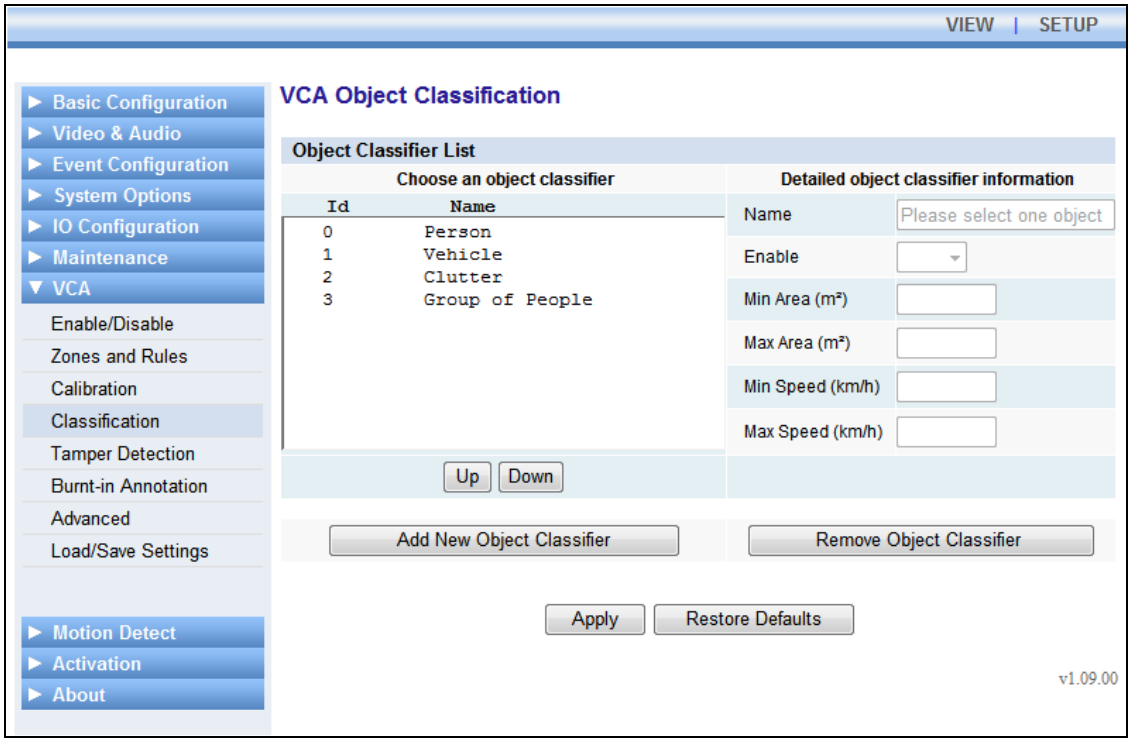
Tracker Configuration

You can set up minimum size of tracked object and minimum recognition time.

3.4. Object Classifier

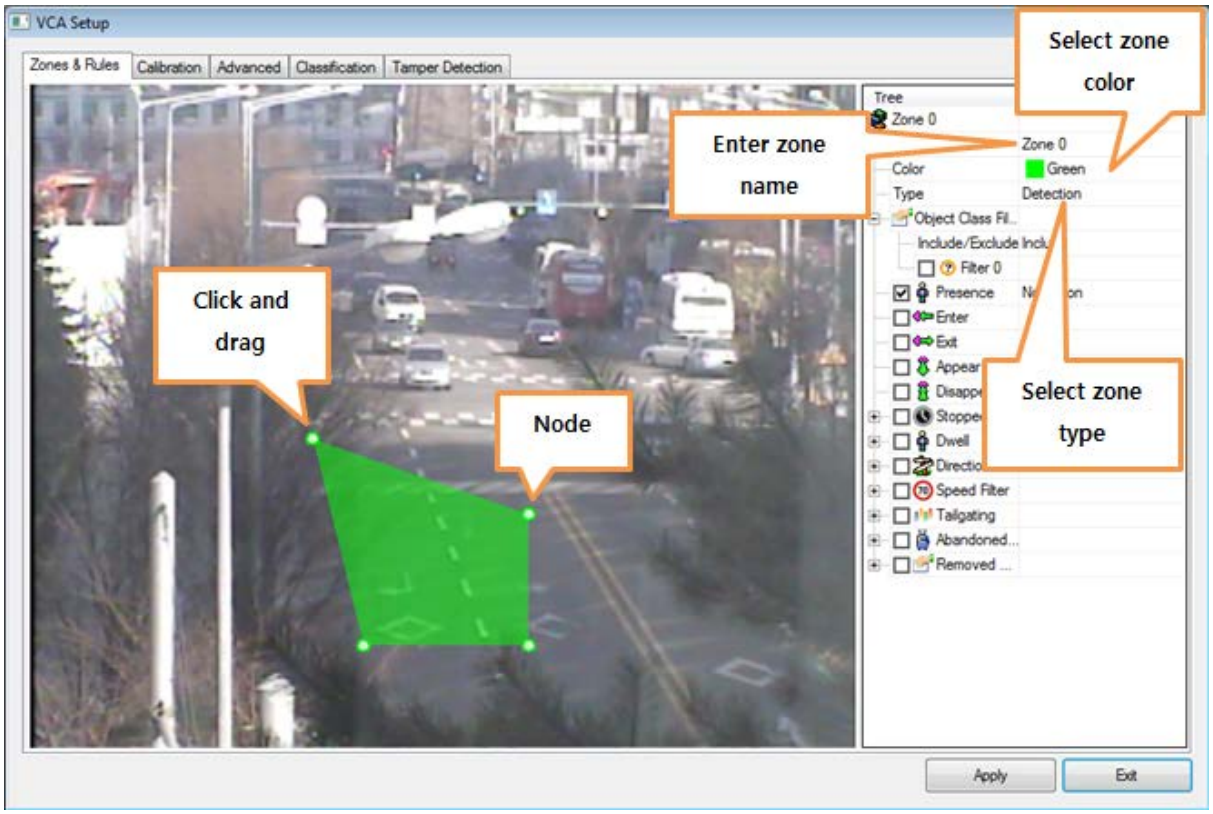
The object classification is based on properties extracted from the object including object area and speed. If you want to add new object, click Add New Object Classifier button and enter the Min/Max Area, Min/Max speed.





3.5. Zones and Rules

In order to detect events of interest, detection zones and lines must be defined. Detection zones define an area of interest. Detection lines are similar to detection zones but they define a perimeter instead of a region.
Zones and lines can be edited to be any shape or size. Zones and lines are controlled by manipulating "nodes" that represent the zone/line vertices. To change the shape of a zone or line, simply grab a node with the left mouse button and drag it to the desired location. It is possible to configure "non-detection" zones, where nothing is detected or tracked.



Object Presence

Objects that are present inside a zone or pass through a line will trigger the rule and raise an alarm.

Object Enter and Exit

An object entered alarm is raised when an object crosses from the outside to the inside of a detection zone. Conversely, an object exited alarm is raised when an object crosses from the inside to the outside of a detection zone:

Object Appear and Disappear

An object appears alarm is raised when an object appears inside a detection zone. Note that this is different from object entered detection since the object must be initially detected inside the zone without entering, e.g. people appearing in a doorway, or cars appearing from an underground car park. Conversely an object disappear alarm is raised when an object disappears inside a detection zone. Again, this is different from object exit detection since the object must be tracked into the zone and then disappear without exiting the zone.

Object Stopped

Objects that are stopped inside a zone for longer than the defined amount of time will trigger the rule and raise an alarm.

Object Dwell

Objects that dwell inside a zone for longer than the defined amount of time will trigger the rule and raise an alarm.

Object Direction

Adjust the direction and acceptance angle to suit the detection scenario. Objects that travel in the configured direction (within the limits of the acceptance angle) through a zone or over a line trigger the rule and raise an alarm.

Object Speed

Objects that travel within the bounds of the configured speeds, through a zone or over a line trigger the rule and raise an alarm.

Tailgating

After one object generates an event, another object generates the same event in the defined amount of time will trigger the rule and raise an alarm. Only IP Products include this function.

Abandoned Object

When there is no movement after new object appear will trigger the rule and raise an alarm. The time should be set more 10seconds. Only IP Products include this function.

Removed Object

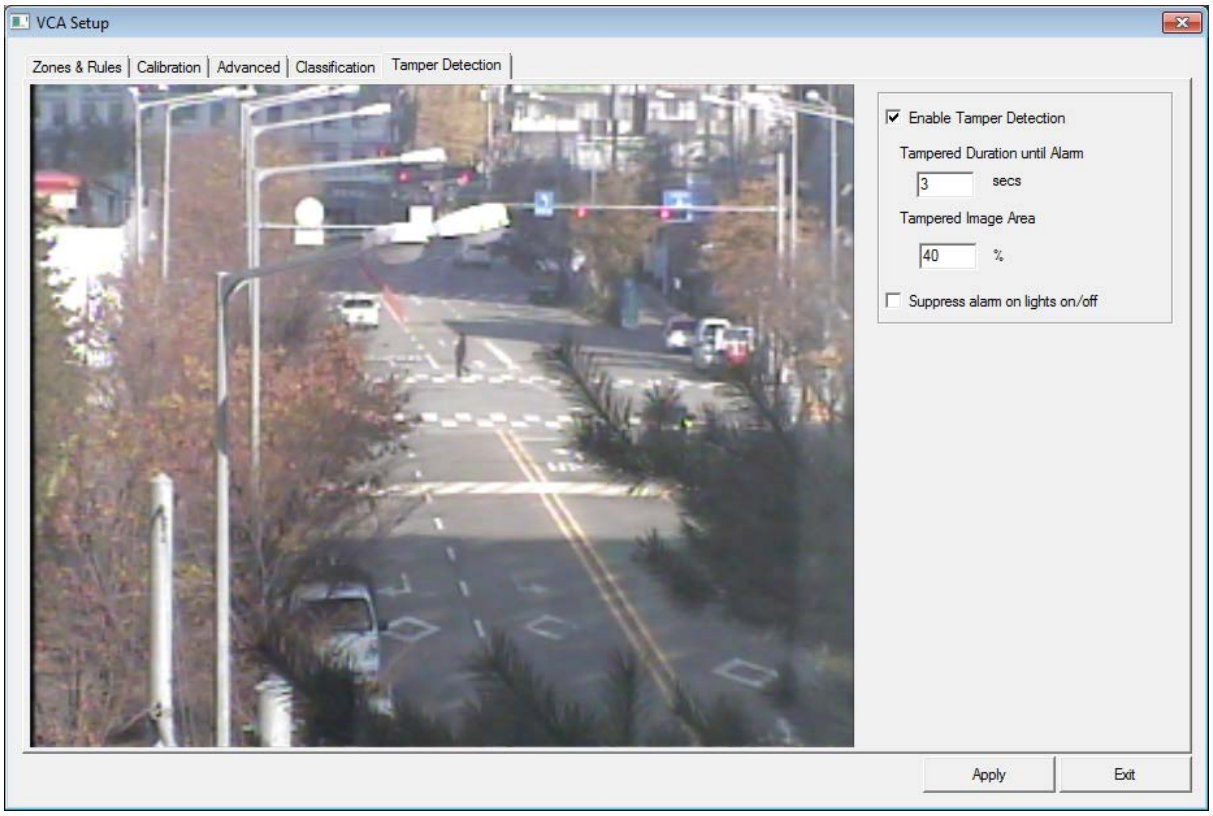
Object disappear for more than defined amount of time will trigger the rule and raise an alarm. The time should be set more 10seconds. Only IP Products include this function.

Counting Line

When size-defined objects pass through defined lane will trigger the rule and raise an alarm. Only VCA counting includes this function.

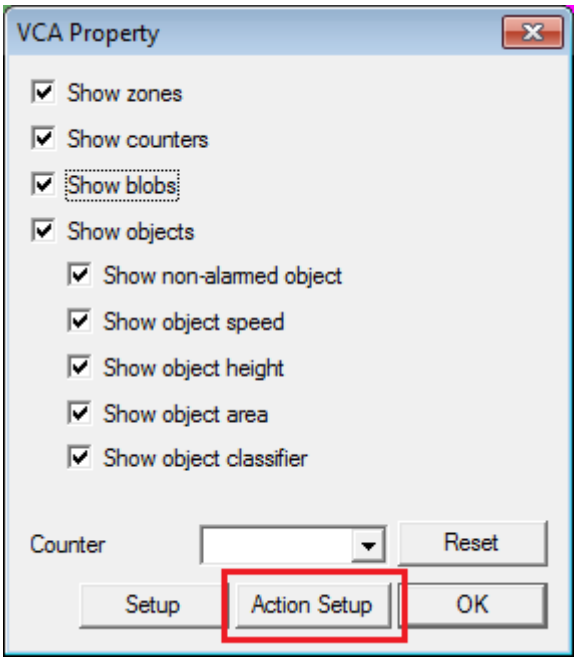
Note: The camera must be calibrated for this function to be available.

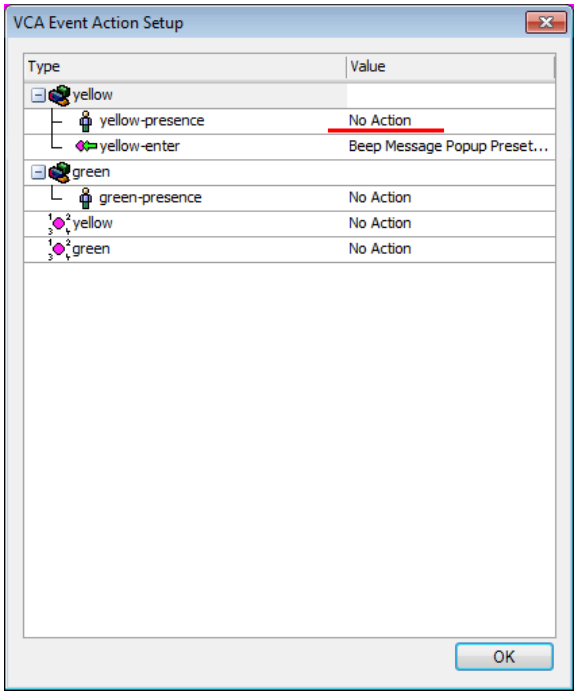
3.6. Tamper Detection



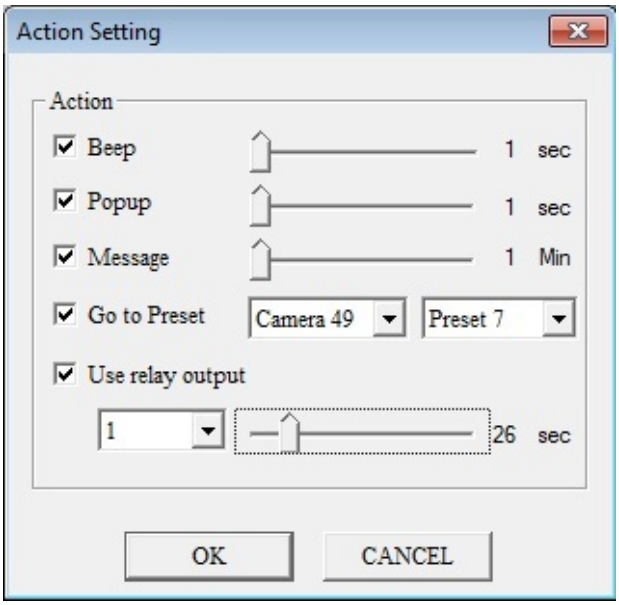
The tamper detection function is intended to detect camera tampering events such as bagging, de-focusing, moving the camera, etc. This is achieved by detecting large persistent changes in the image.

4. VCA Action Setup

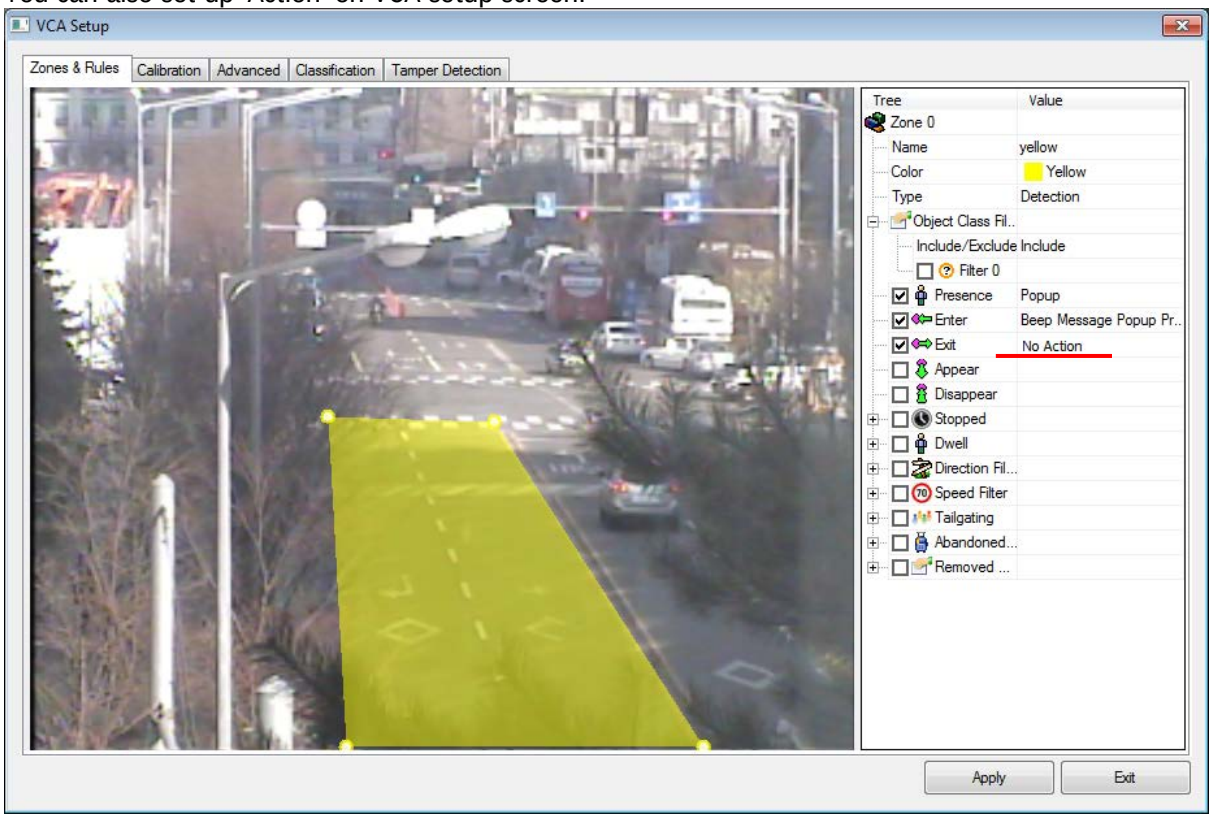




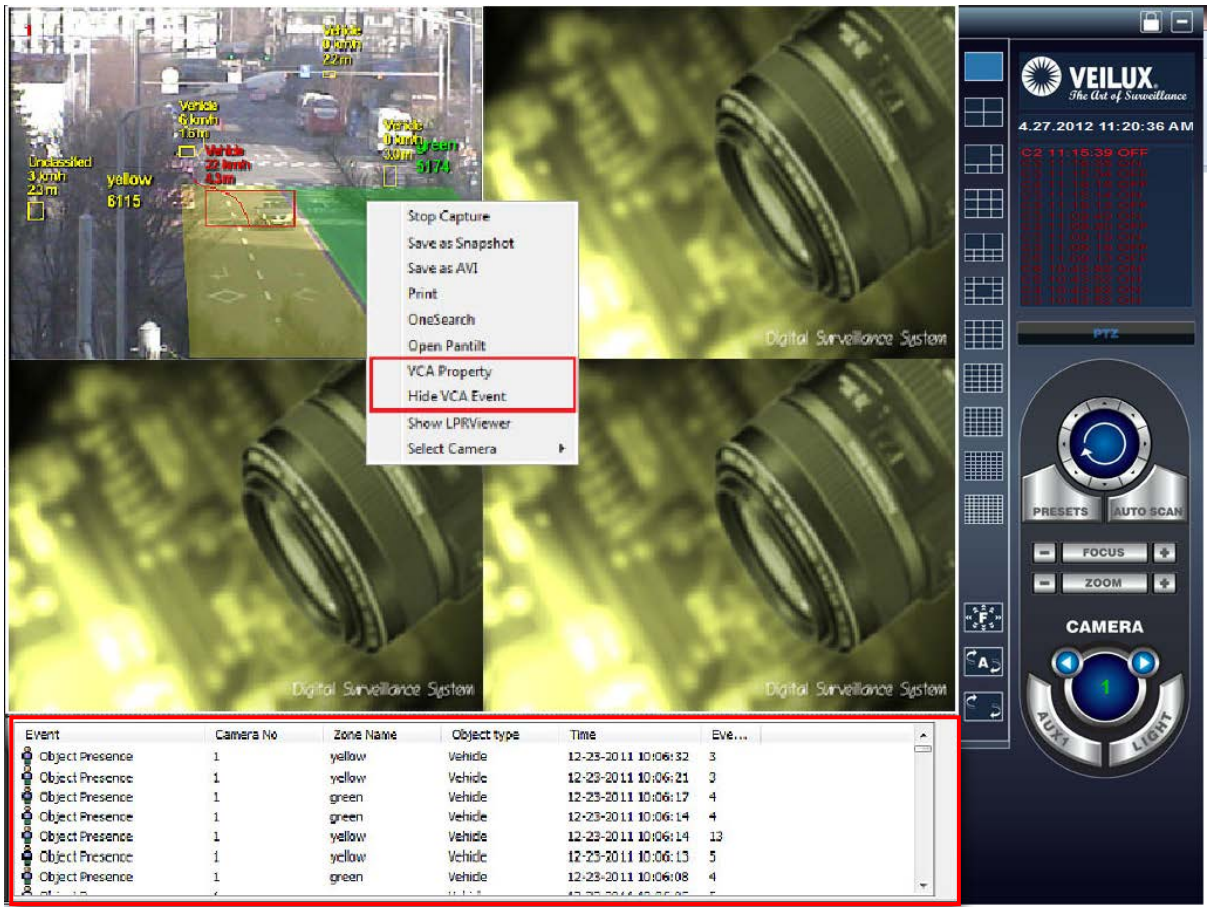
Double Click the Cells written “No Action” to setup Action. You can see the Dialog like below. Set the Actions like beep, Popup, Alert Message, Go to Preset, Relay output for your purpose. You can set the VCA action by each event and count



You can also set up 'Action' on VCA setup screen.



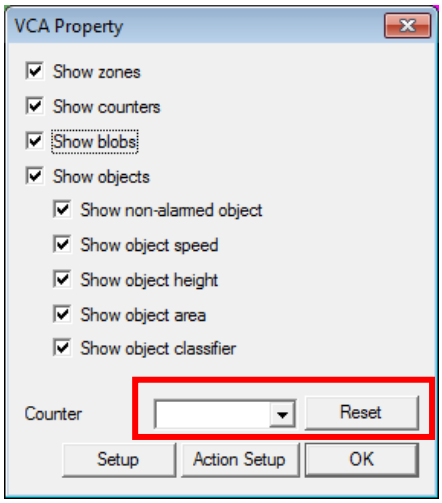
5. VCA Event Monitoring



On the Bottom of the DVR Viewer you can monitor VCA events at real-time.
You can see the Event type, Event Time, Zone name, Object class on the list box.

Using Mouse Right's context menu, you can Hide or Show the VCA Event viewer.

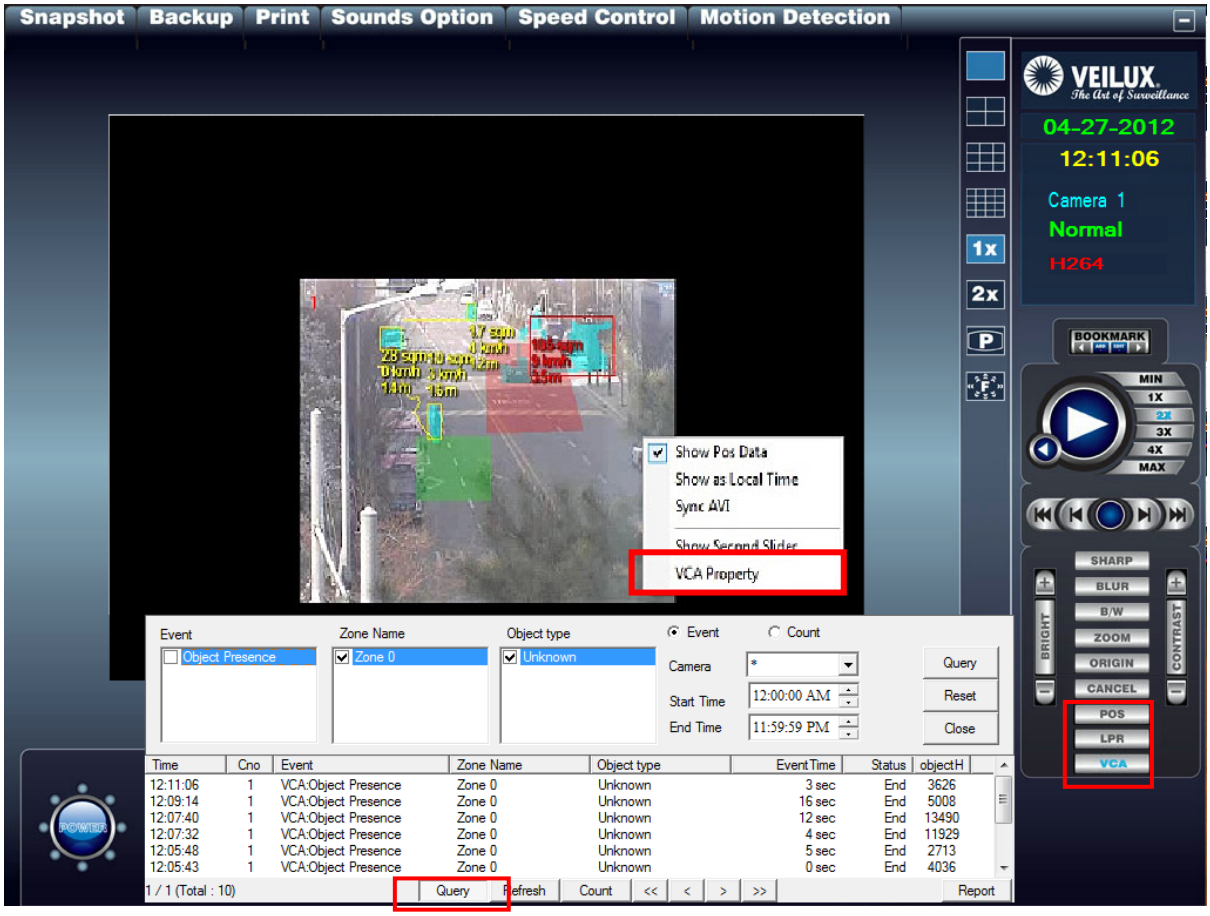
If you want to search the image of one event, just double click the list box's item.
OneSearch.exe program shows that event's video image.



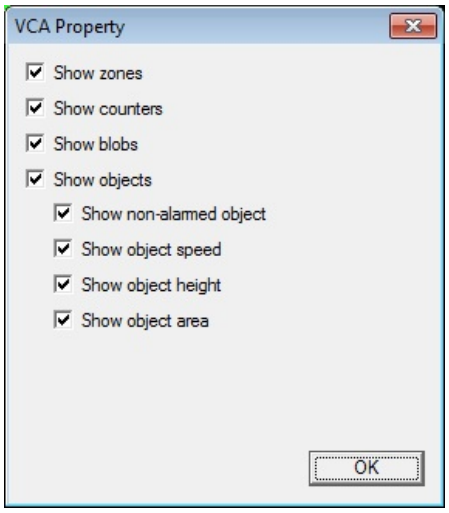
VCA Property Dialog box allows you to Hide or Show the many type of information.
You can also reset the Counter on the live monitoring.

6. VCA Event Search

DVR search program includes the VCA event search menu.

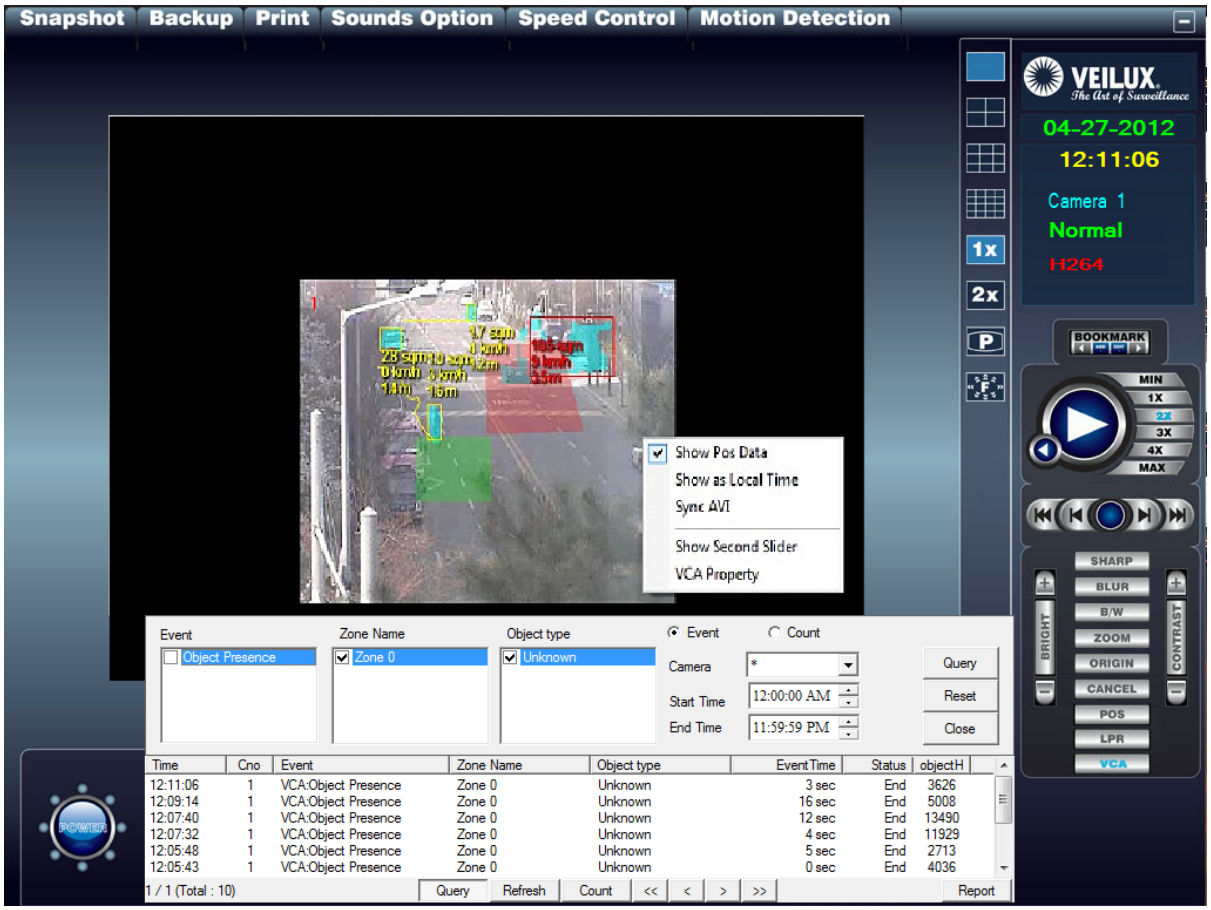


Click VCA button to search the VCA Event.

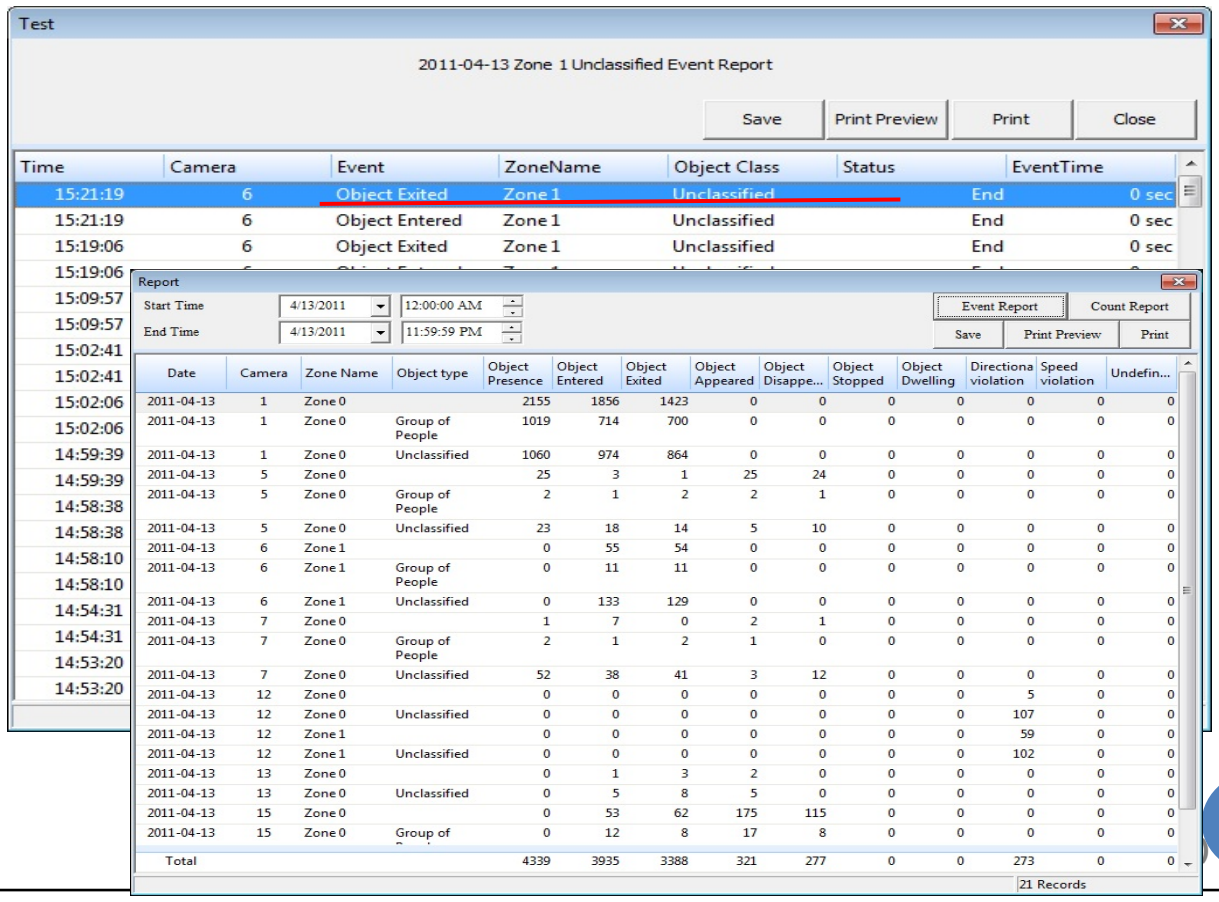


On Video Image Window, click mouse left button. The context menu includes the VCA Property.

Click Query button to search with conditions.
Click Report button to view the VCA Report. VCA Report shows the statistics the VCA events.

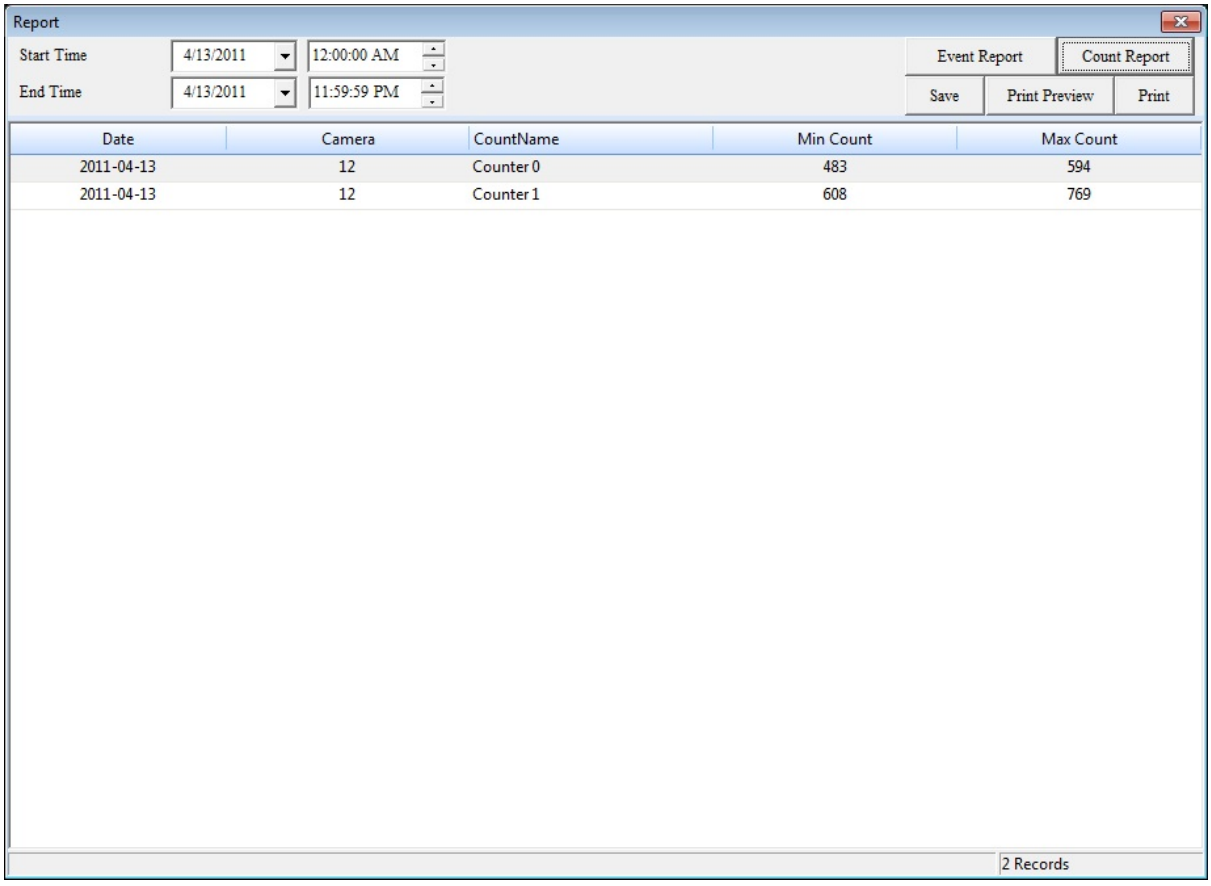


Click “Count” button to display the count history of the day.
If you want to detailed query of the counter, click Query button, and select count.
You can choose the counter name and set the counter value you want to query.


Test
2011-04-13 Zone 1 Unclassified Event Report
Save
Print Preview
Print
Close
Time Camera Event ZoneName Object Class Status EventTime
15:21:19 6 Object Exited Zone 1 Unclassified End 0 sec
15:21:19 6 Object Entered Zone 1 Unclassified End 0 sec
15:19:06 6 Object Exited Zone 1 Unclassified End 0 sec
Report
Start Time 4/13/2011 12:00:00 AM
End Time 4/13/2011 11:59:59 PM
Event Report
Count Report
Save
Print Preview
Print
Date Camera Zone Name Object type Object Presence Object Entered Object Exited Object Appeared Object Disappe... Object Stopped Object Dwelling Directiona violation Speed violation Undefin...
2011-04-13 1 Zone 0 2155 1856 1423 0 0 0 0 0 0 0
2011-04-13 1 Zone 0 Group of People 1019 714 700 0 0 0 0 0 0 0
2011-04-13 1 Zone 0 Unclassified 1060 974 864 0 0 0 0 0 0 0
2011-04-13 5 Zone 0 25 3 1 25 24 0 0 0 0 0
2011-04-13 5 Zone 0 Group of People 2 1 2 2 1 0 0 0 0 0
2011-04-13 5 Zone 0 Unclassified 23 18 14 5 10 0 0 0 0 0
2011-04-13 6 Zone 1 0 55 54 0 0 0 0 0 0 0
2011-04-13 6 Zone 1 Group of People 0 11 11 0 0 0 0 0 0 0
2011-04-13 6 Zone 1 Unclassified 0 133 129 0 0 0 0 0 0 0
2011-04-13 7 Zone 0 1 7 0 2 1 0 0 0 0 0
2011-04-13 7 Zone 0 Group of People 2 1 2 1 0 0 0 0 0 0
2011-04-13 7 Zone 0 Unclassified 52 38 41 3 12 0 0 0 0 0
2011-04-13 12 Zone 0 0 0 0 0 0 0 0 5 0 0
2011-04-13 12 Zone 0 Unclassified 0 0 0 0 0 0 0 107 0 0
2011-04-13 12 Zone 1 0 0 0 0 0 0 0 59 0 0
2011-04-13 12 Zone 1 Unclassified 0 0 0 0 0 0 0 102 0 0
2011-04-13 13 Zone 0 0 1 3 2 0 0 0 0 0 0
2011-04-13 13 Zone 0 Unclassified 0 5 8 5 0 0 0 0 0 0
2011-04-13 15 Zone 0 0 53 62 175 115 0 0 0 0 0
2011-04-13 15 Zone 0 Group of 0 12 8 17 8 0 0 0 0 0
Total 4339 3935 3388 321 277 0 0 273 0 0
21 Records

Click Event Report to view the VCA Event by type. If you double click the line, sub window shows the details of the events.

Click Count Report to view the Counters value by date.

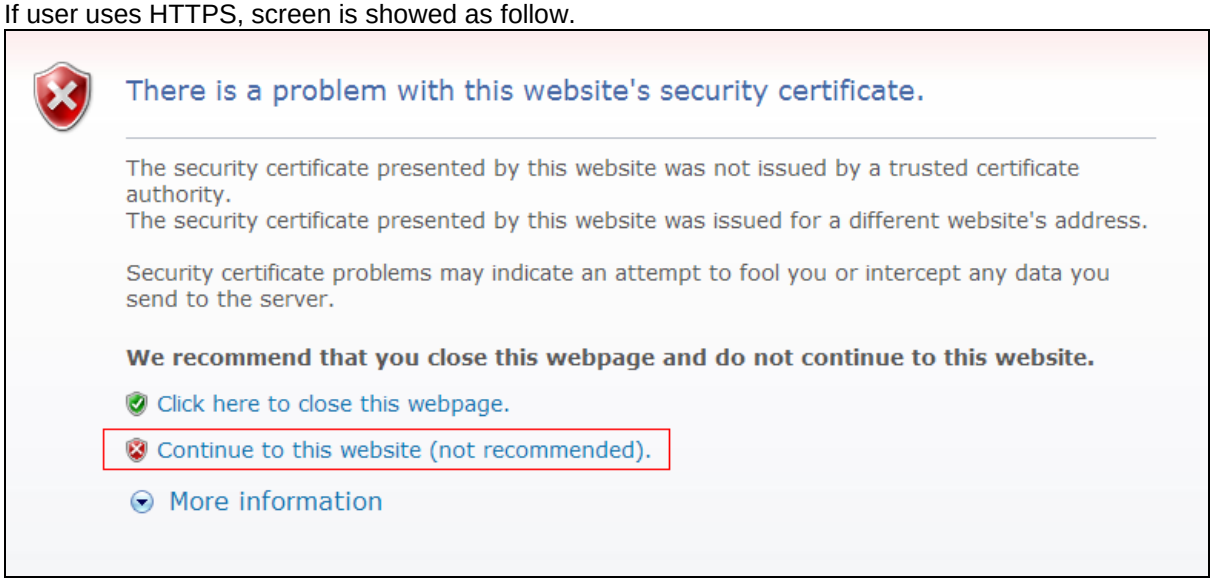


It displays the Min/Max counter value of the each camera's counter.

- *Save:* Saves the data into the CSV file for backup.
- *Print Preview & Print:* Allows you to print the report.

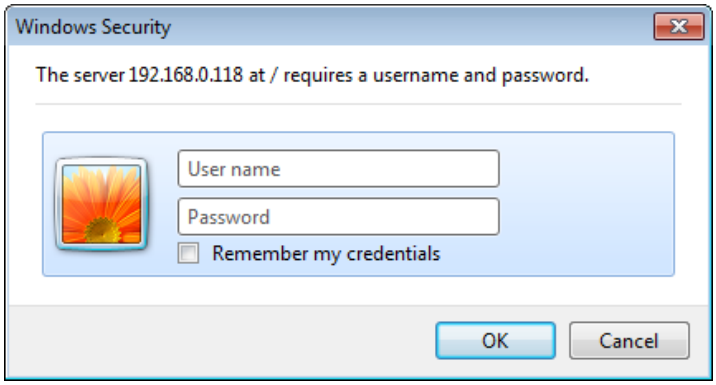
7. IP Product VCA Setup

If user uses HTTPS, screen is showed as follow.

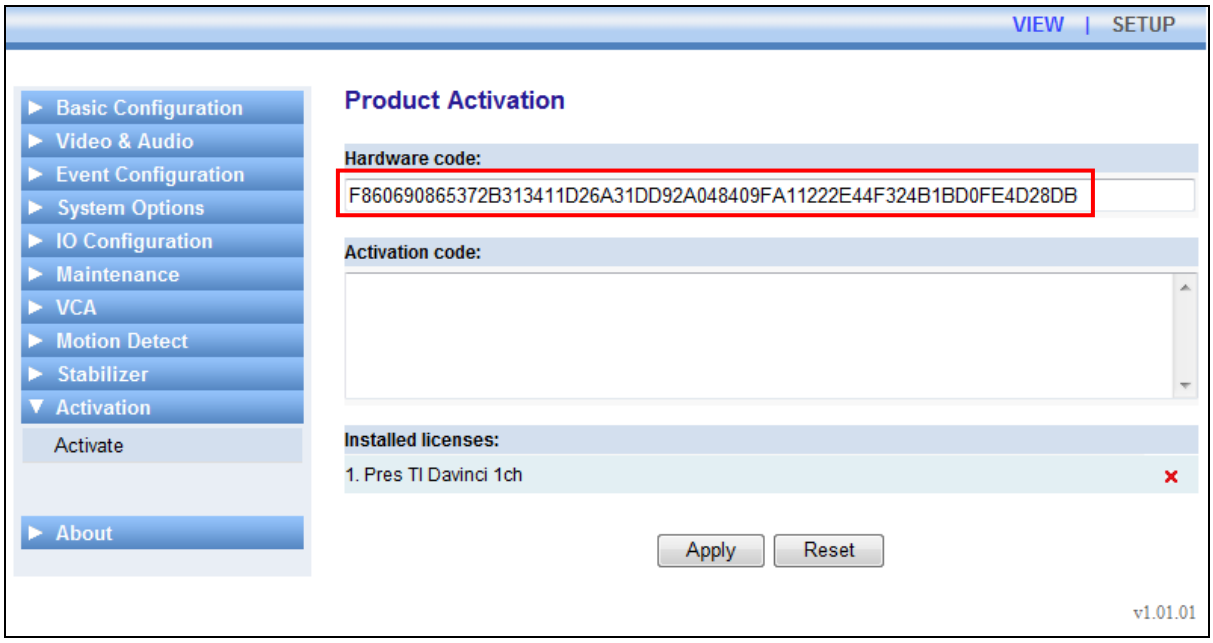

There is a problem with this website's security certificate.
The security certificate presented by this website was not issued by a trusted certificate authority.
The security certificate presented by this website was issued for a different website's address.
Security certificate problems may indicate an attempt to fool you or intercept any data you send to the server.
We recommend that you close this webpage and do not continue to this website.
Click here to close this webpage.
Continue to this website (not recommended).
More information

After choose “Continue to this website”, process will be proceed..

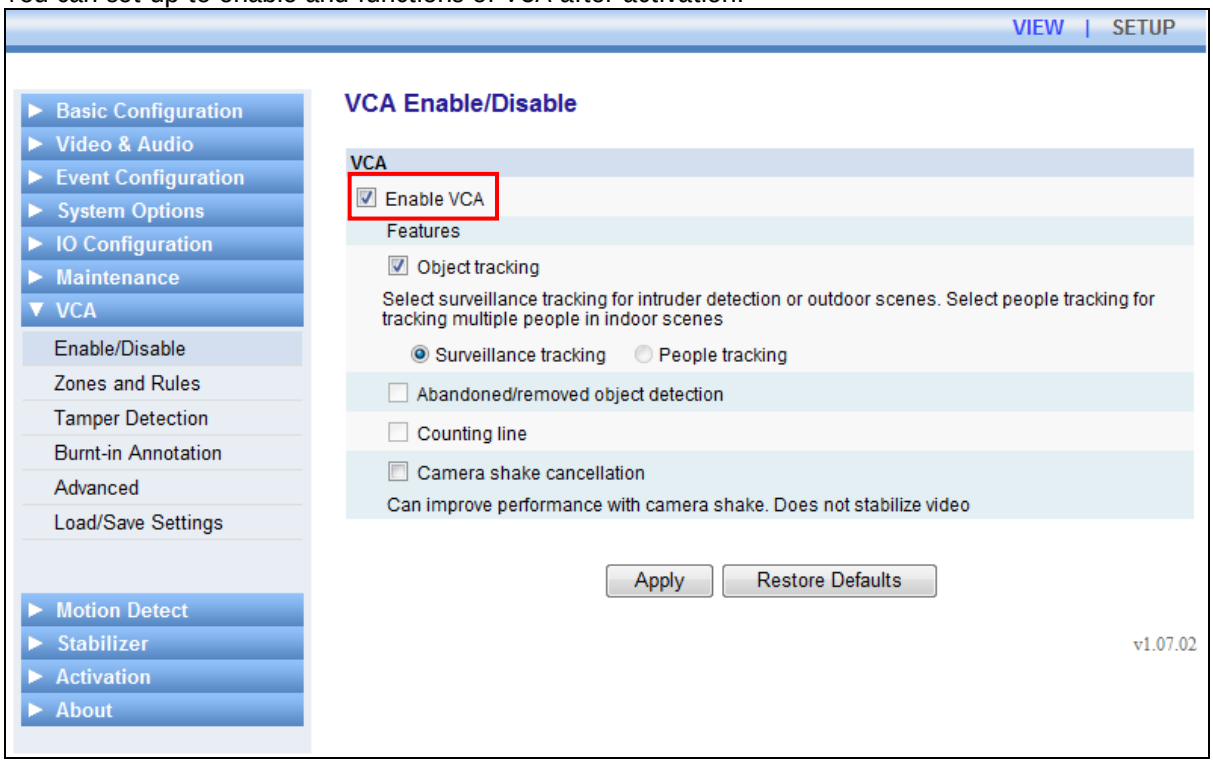
A window is showed to set up, you should fill out defined username and password by device. (Default values are “root” and “pass”.)



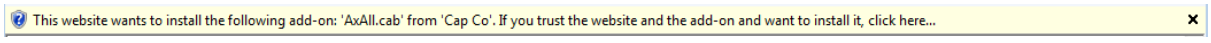
Basically, only VCA Presence is set on IP Products. If you want to set up another VCA product on your IP device, send us hardware code of the device as following screen. After then you can get Activation code from us. Enter the Activation code and clock “Apply”, finally you can use VCA functions. (No blank when you enter the Activation code.)



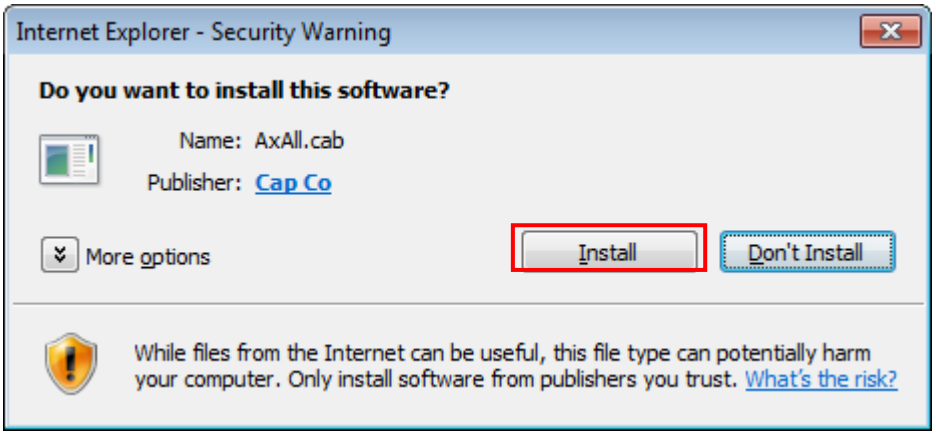
You can set up to enable and functions of VCA after activation.

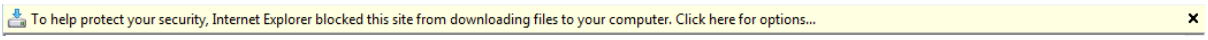


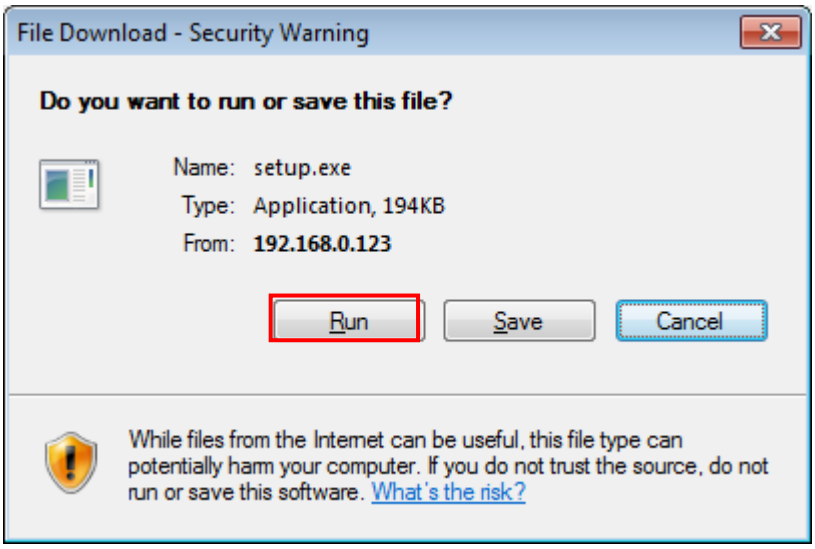
It could be showed a message as below, when you choose “Zone and Rules” or “Tamper Detection”.

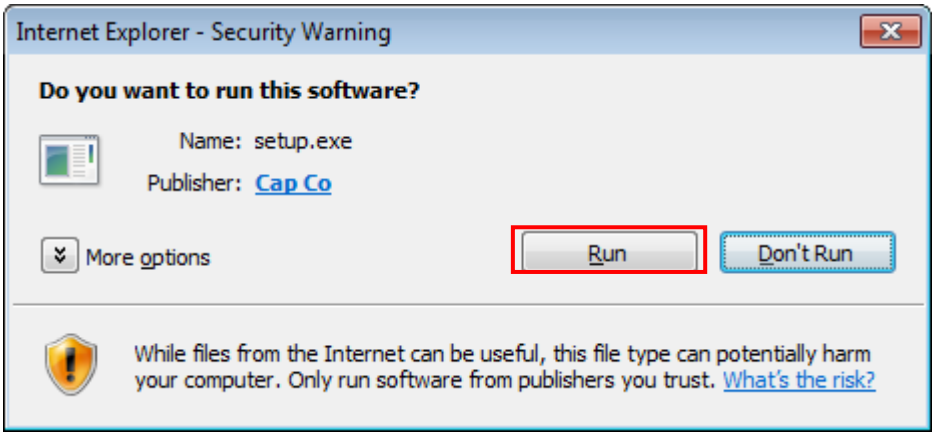

This website wants to install the following add-on: 'AxAll.cab' from 'Cap Co'. If you trust the website and the add-on and want to install it, click here...

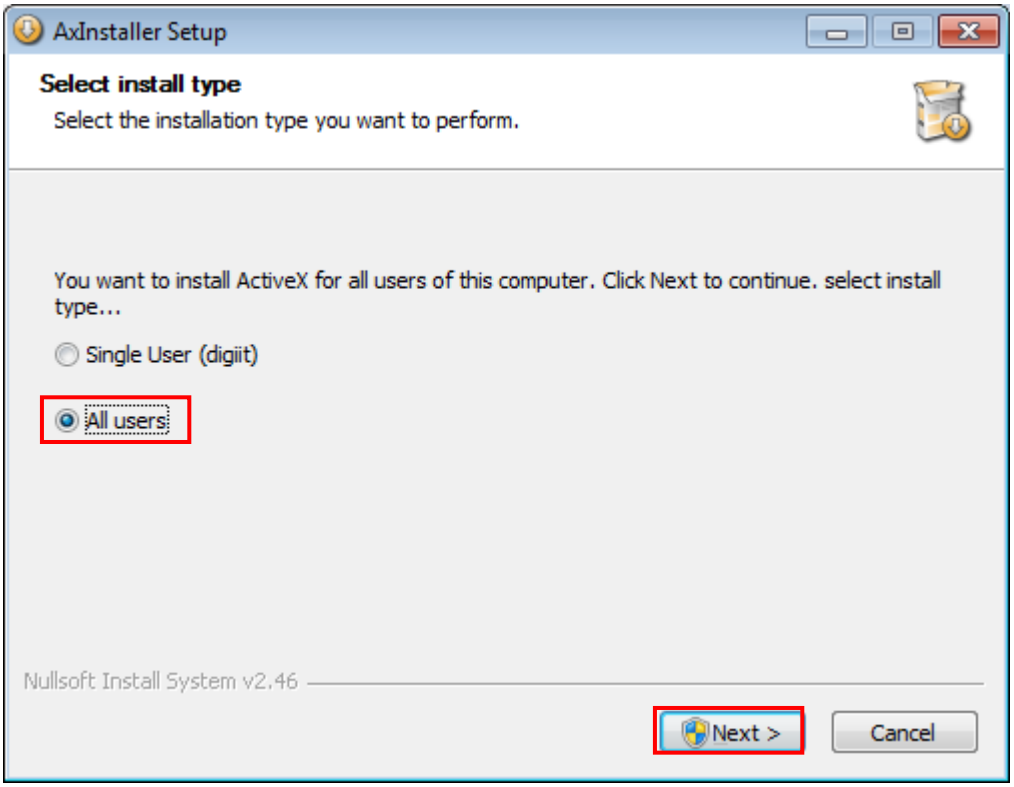
In this case, you should install ActiveX as follows for VCA setup.


Internet Explorer - Security Warning
Do you want to install this software?
Name: AxAll.cab
Publisher: Cap Co
More options
Install
Don't Install
While files from the Internet can be useful, this file type can potentially harm your computer. Only install software from publishers you trust. What's the risk?

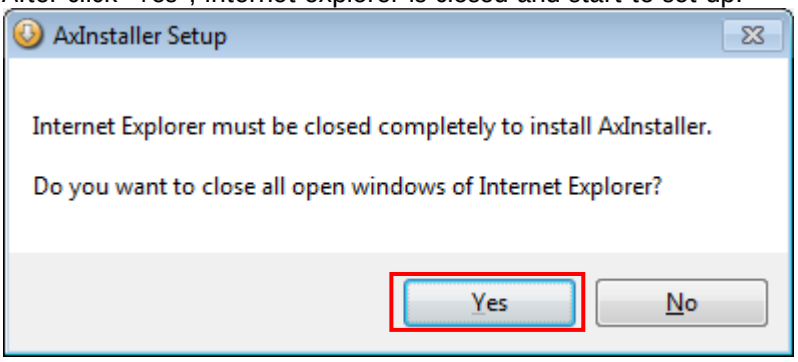

To help protect your security, Internet Explorer blocked this site from downloading files to your computer. Click here for options...

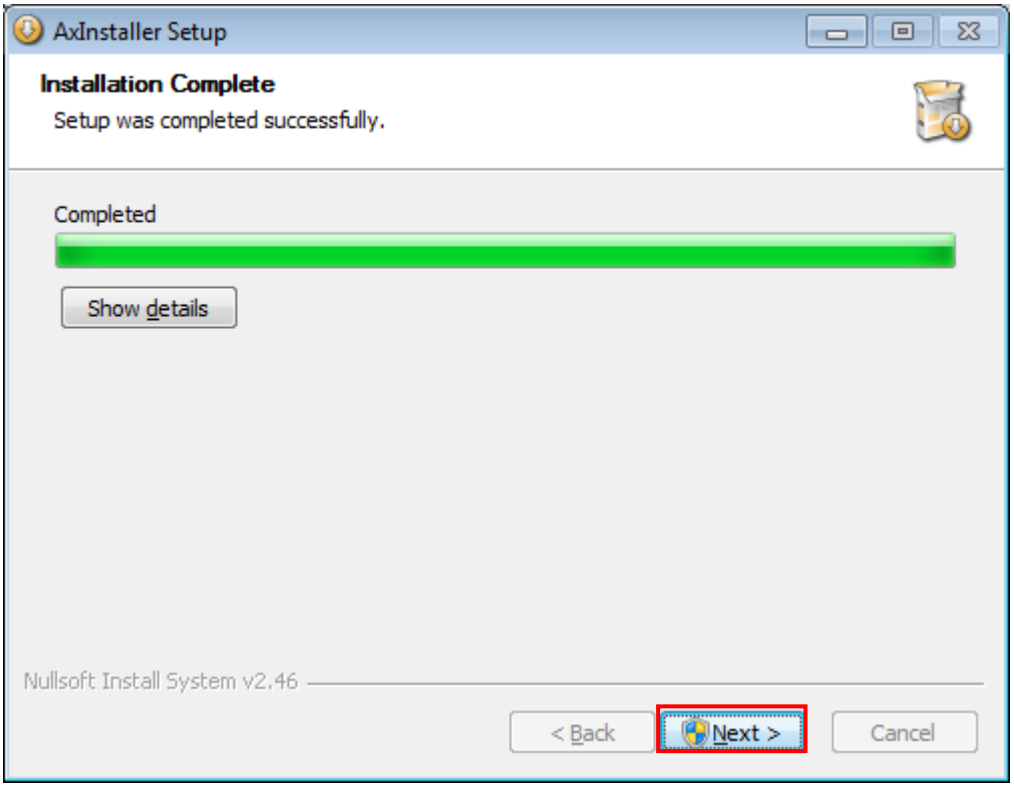

File Download - Security Warning
Do you want to run or save this file?
Name: setup.exe
Type: Application, 194KB
From: 192.168.0.123
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

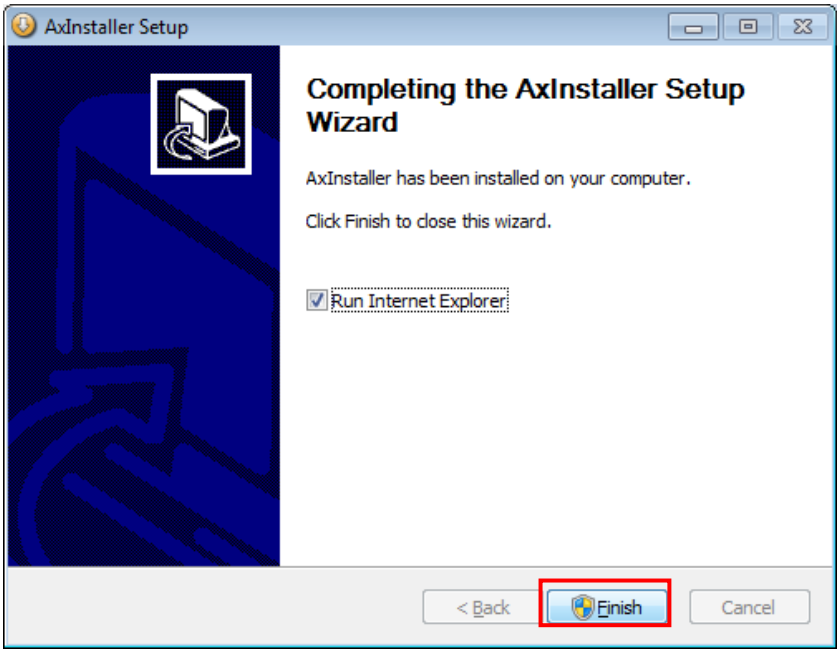

Internet Explorer - Security Warning
Do you want to run this software?
Name: setup.exe
Publisher: Cap Co
More options
Run
Don't Run
While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?


AxInstaller Setup
Select install type
Select the installation type you want to perform.
You want to install ActiveX for all users of this computer. Click Next to continue. select install type...
Single User (digiit)
All users
Nullsoft Install System v2.46
Next >
Cancel

After click “Yes”, internet explorer is closed and start to set up.


AxInstaller Setup
Internet Explorer must be closed completely to install AxInstaller.
Do you want to close all open windows of Internet Explorer?
Yes
No





After click 'Finish', internet explorer is restarted.

Chapter 5

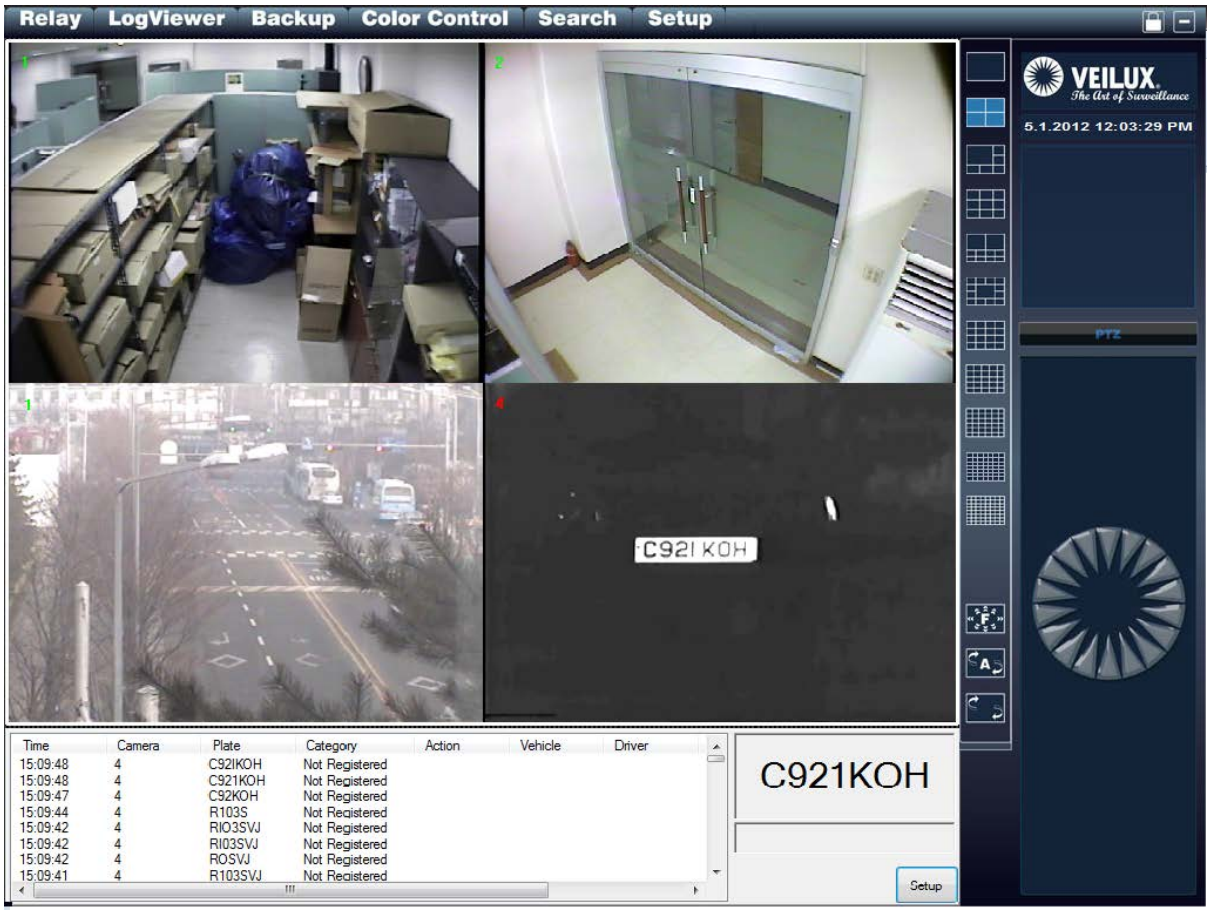
LPR(Option)

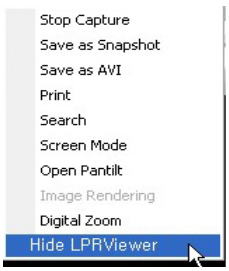
LPR Application

5.1 Start Application

From the Windows “Desk Top”, double click the DVR Viewer icon, or run the DVRMain.exe program in C:\Program Files\DVR\Main folder.

When User starts DVR program, current captured images from cameras will be displayed as follows





If you want to hide the LPRViewer Dialog, Click Right-Mouse.
Then Context Menu displayed, you can Hide or Show LPRViewer.

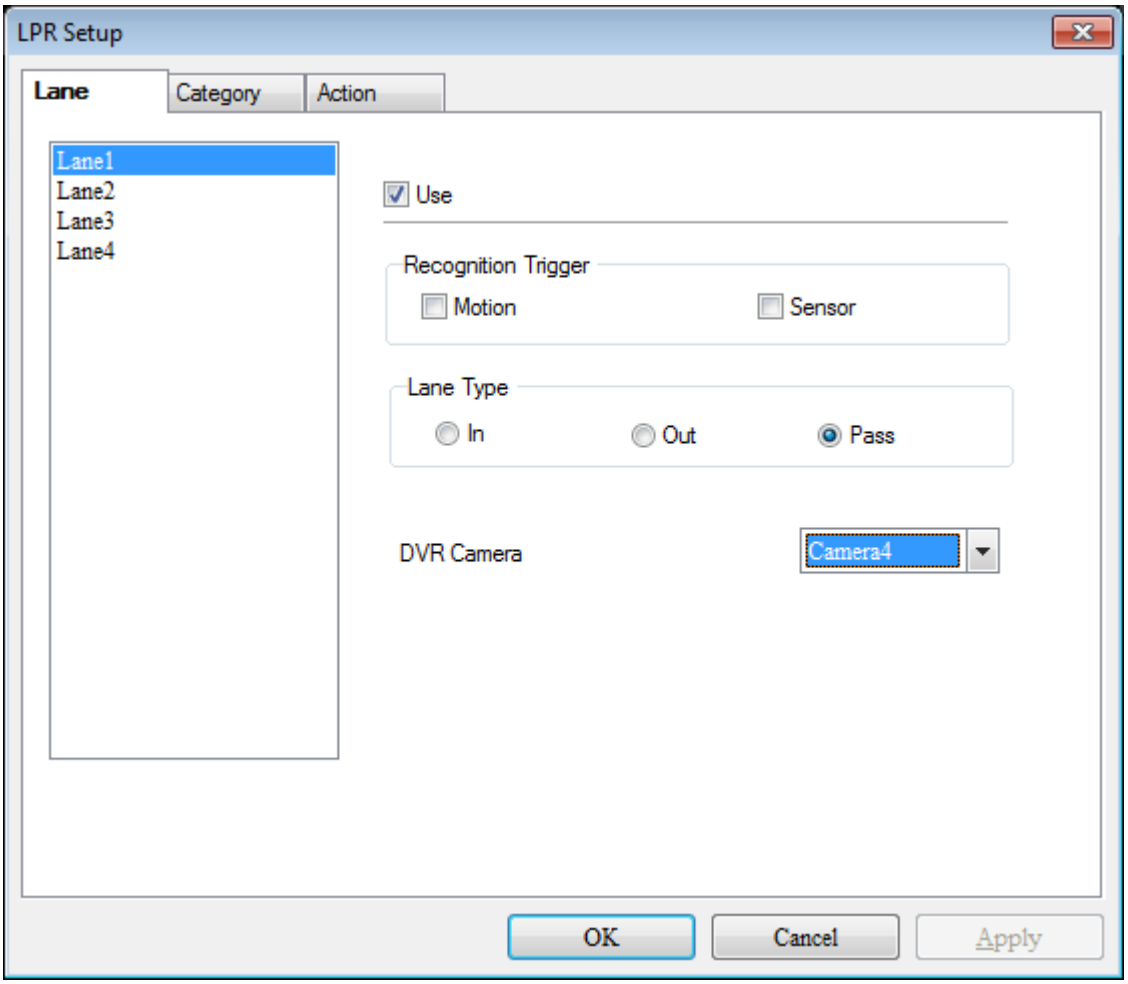
5.2 Setup LPR

Click Setup button on LPR Dialog.

And Logon Dialog box displayed. You have to have the user right to setup the LPR.

Use DVR Setup->Users-> Plugin Level->LPR Setup access right.

First you should setup the Lane information.



Use : Check if you want to use this lane.

Recognition Trigger
: If you want to use recognition trigger, just click motion or sensor check box.

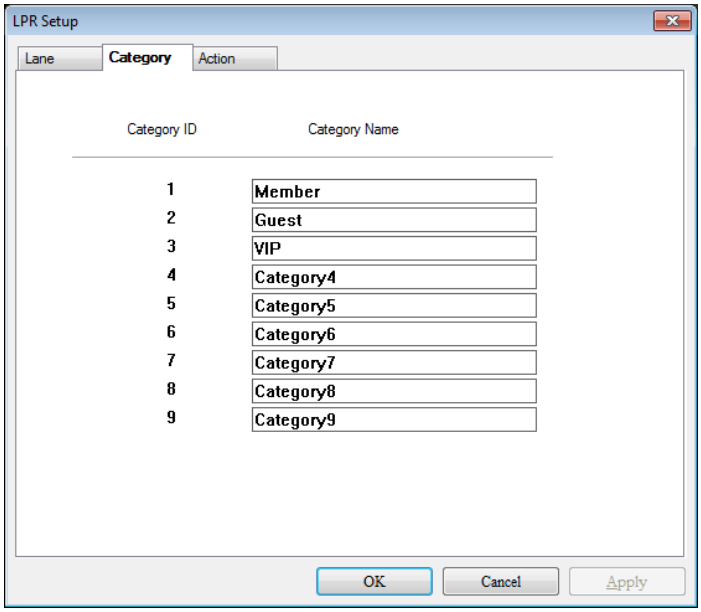
If you click Motion, license recognition is only processed during motion period. And to use motion trigger, you should set the DVR camera save mode as Motion. (DVR Setup->Camera tab->Save Schedule)

If you click Sensor, license recognition is only processed during sensor period. And to use sensor trigger, you should set the DVR sensor. (DVR Setup->Sensor tab, and set the Sensor camera number same as DVR Camera on above Dialog).

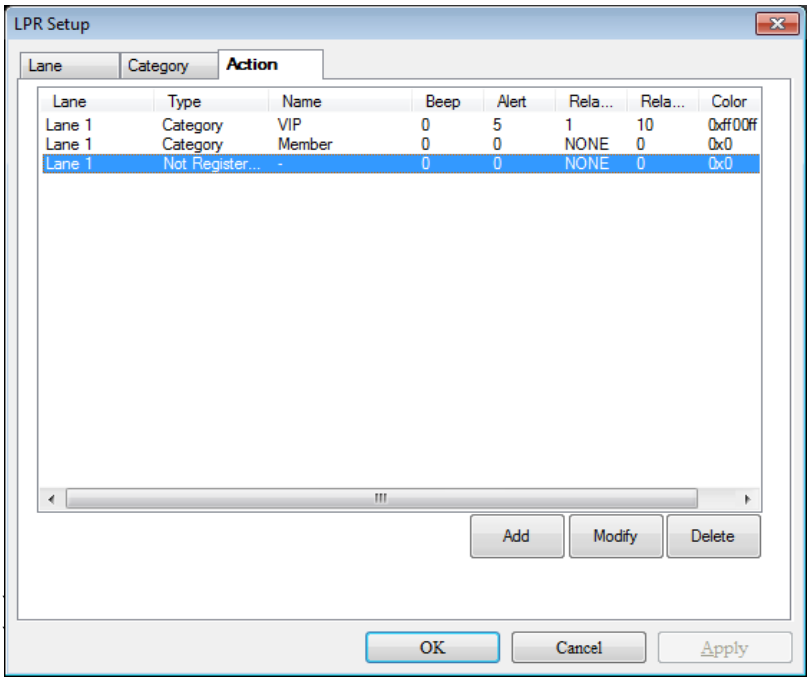
If you don't check Motion or Sensor, license recognition is processed continuously all the time.

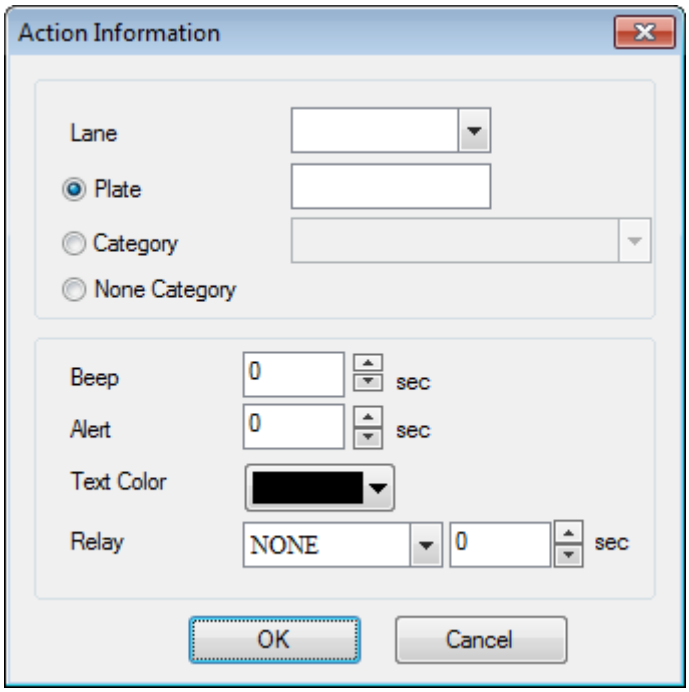
Lane Type : If it is a Entering Lane, choose In, if Exiting Lane, choose Out, or Just Pass Choose Pass. If you don't have In and Out lane as pair, just use Pass lane type.

DVR Camera : Select the camera number of DVR.



System provide category up to 9.
You can change the category names for your need. It is used for grouping vehicles.
And you can set the action(Beep, Alert etc..) by categories.





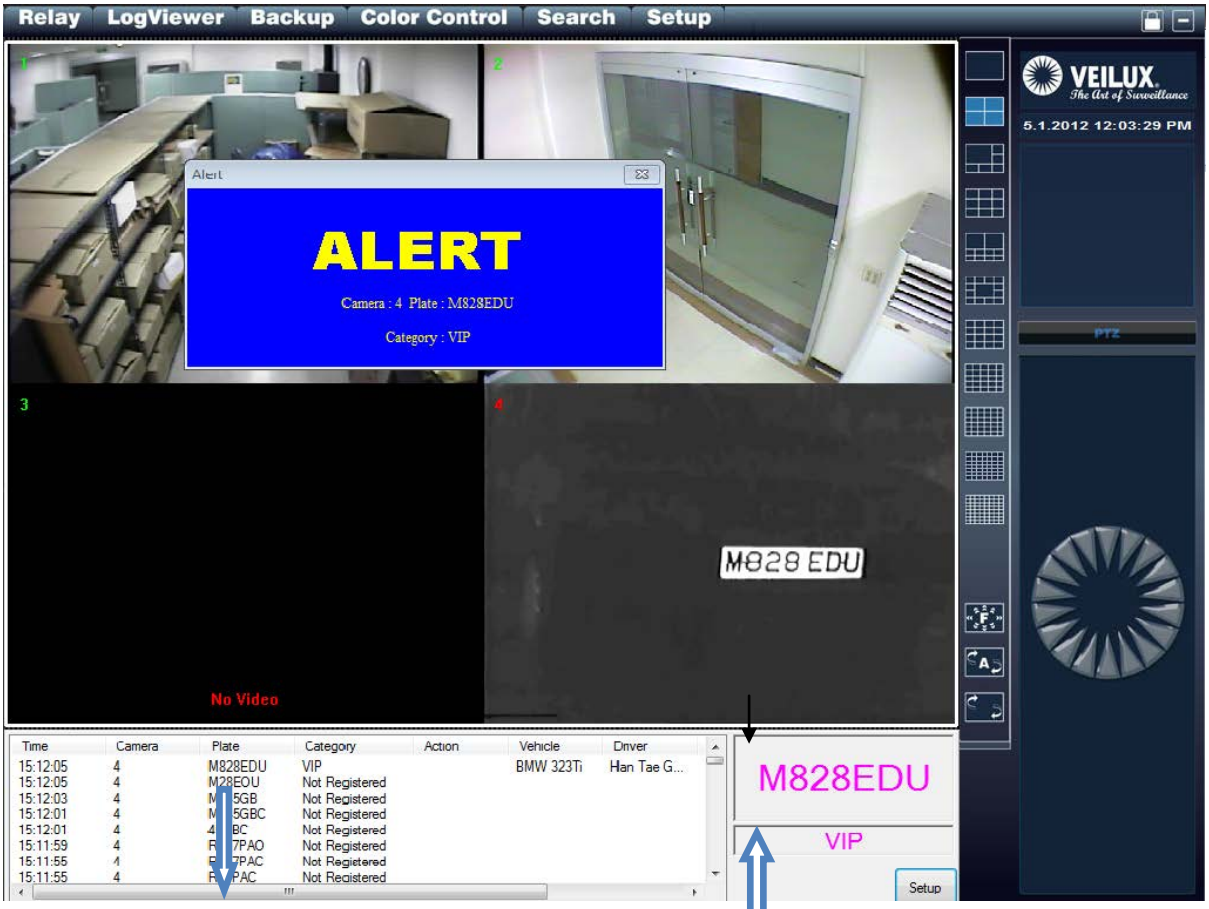
Lane : Select the Lane Number.

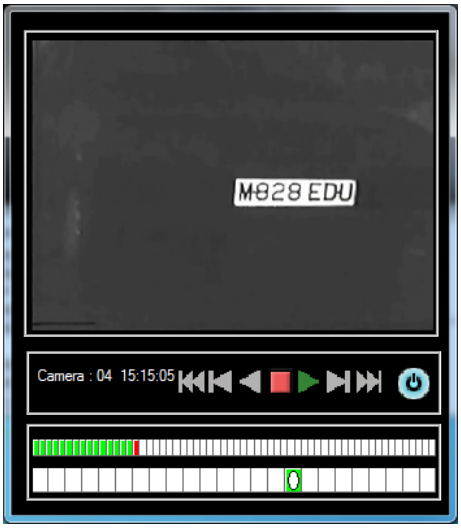
Select one Of the Type of action you want.
Plate : Enter the Plate Number.
Category : Select the Category.
None Category : If you want to Action which is not grouped by category.

Action Type
Beep : Beep Sound
Alert : Alert Message Box
Text Color : On Monitoring Window, Category text is displayed using selected color.
Relay : Select the Relay Number and Relay sec,
If you want to send Relay when selected plate is recognized.

5.3 Run LPR

After you setup LPR, and click OK, LPR Module start automatically.
It provides real time monitoring window of recognition status





You can move this window by Mouse drag.

You can see the playback data by double click the list item.
In this case DVR OneSearch is displayed by selected camera and selected time
The Camera Number is defined in the Setup → Lane Setup Dialog

6 Search

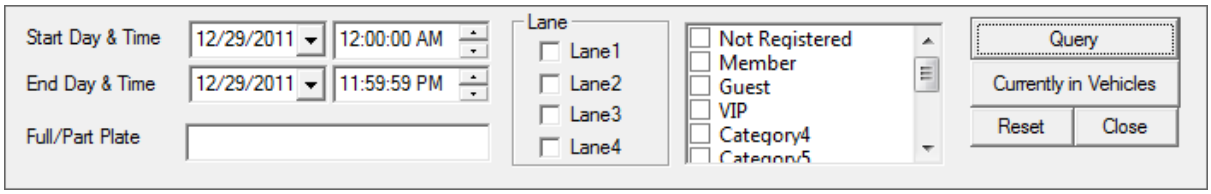
You can search LPR recognition information by using Search.exe program.
When you start the program, the LPR Search Button is displayed on the last side of the panel.
Click the LPR Search button.

6.1 LPR Search

If you click the LPR Search Button, LPR Search window is displayed on the button.

You can see the Recognition result by list for the day.

If you want to specific search, click the Query button.

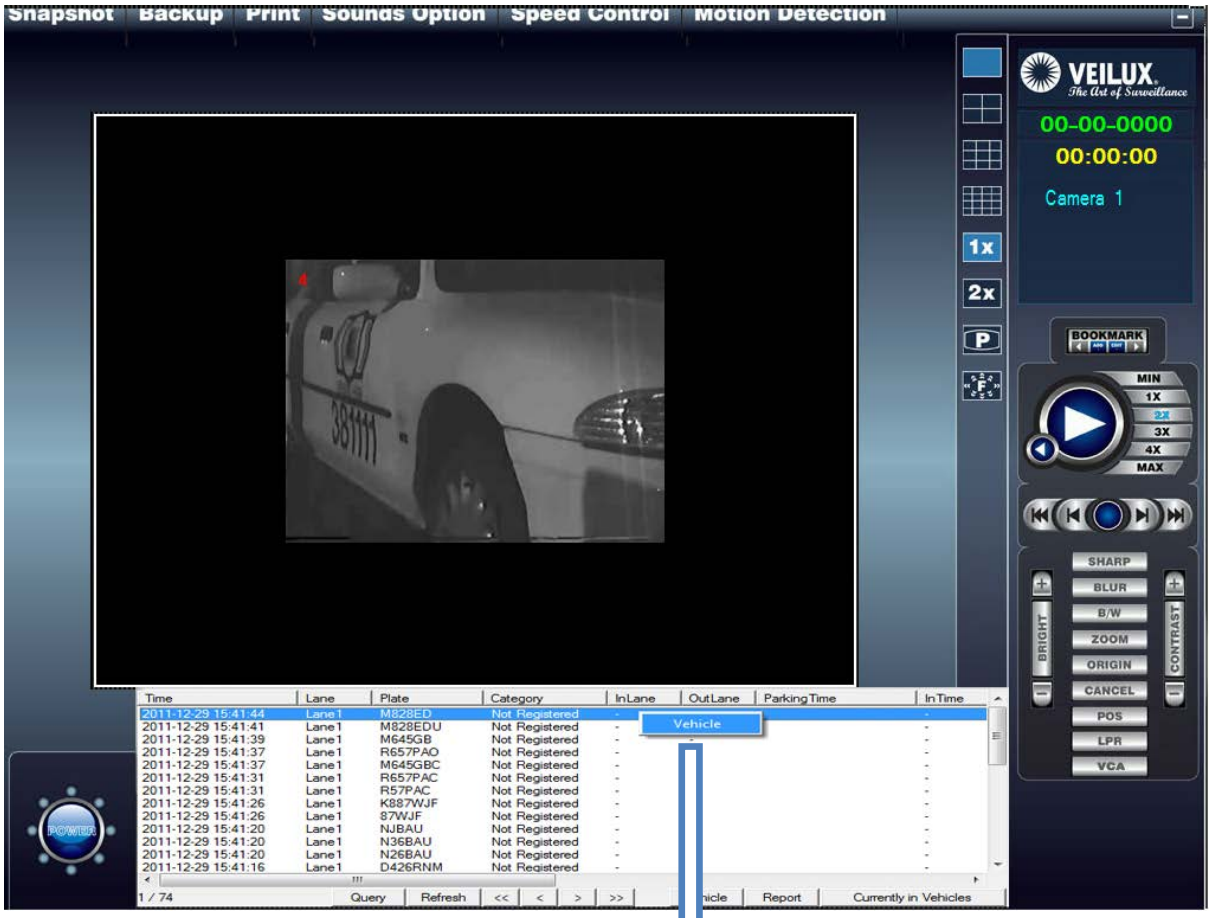


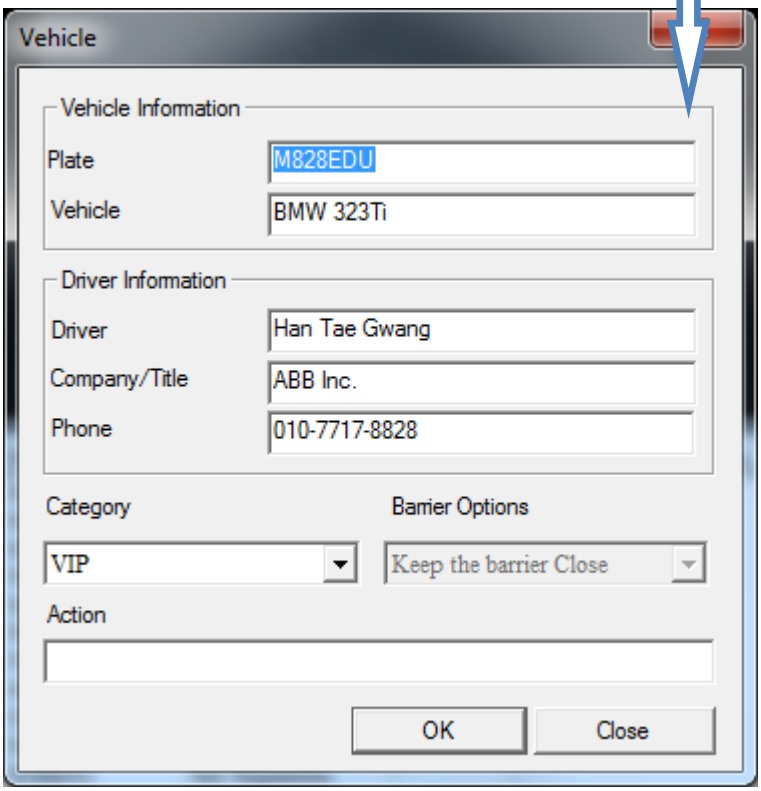
And then above window is displayed, and you can set the specific option.

Click Query button again, above dialog is disappeared.

If you click Currently In Vehicles button, Vehicles displayed currently in Parking lot.

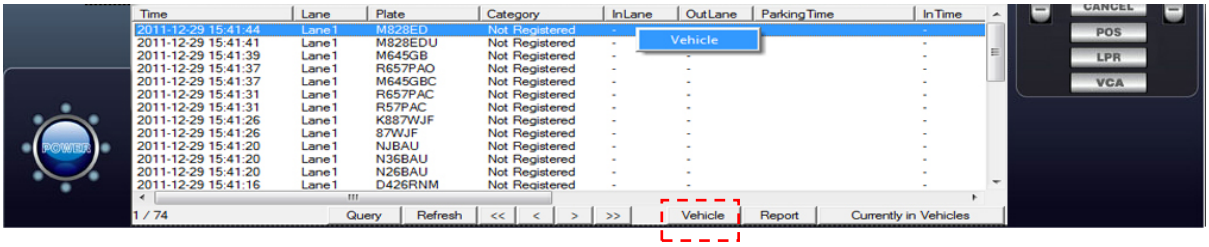
Use Reset button to clear search option, and set the default value.



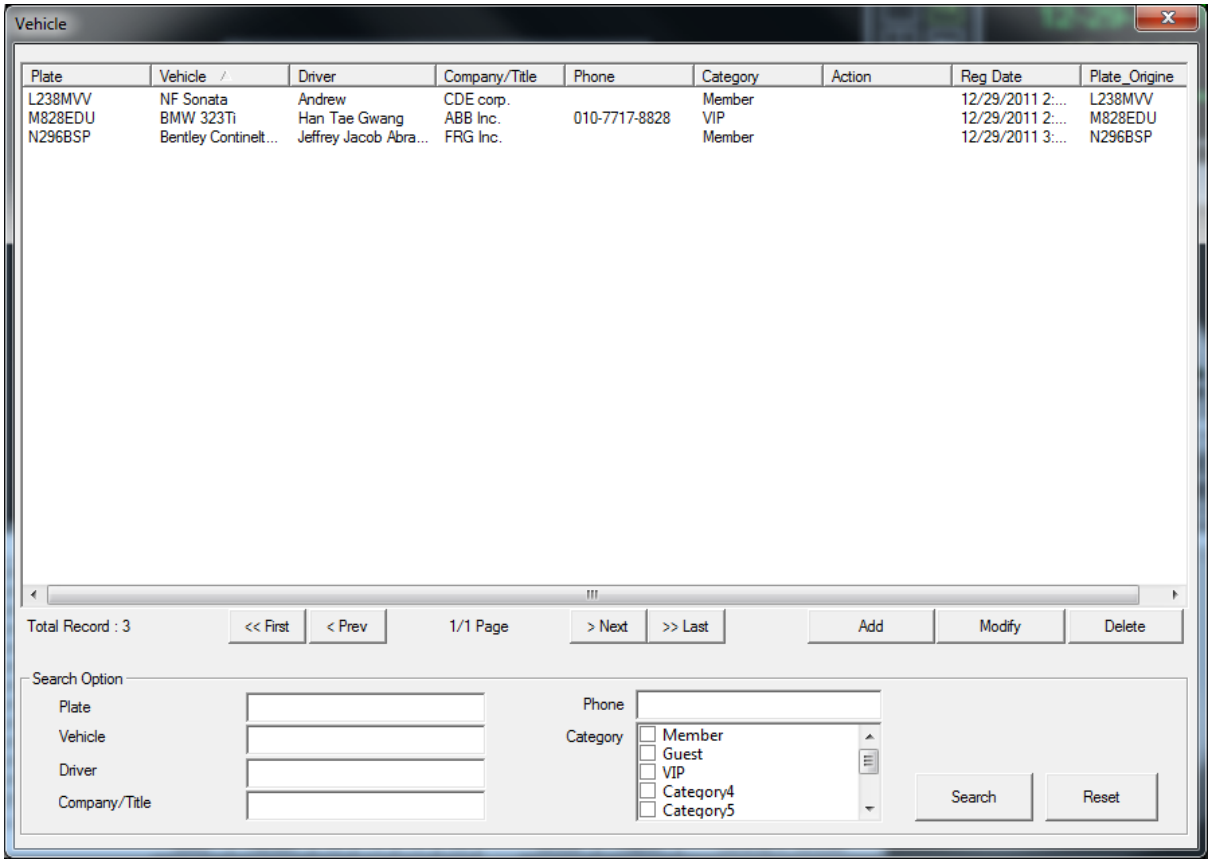


You can add Vehicle's Information by Mouse Right Click on the LPR Search's List Control.

6.2 Vehicle



Click Vehicle button, and you can see the Vehicles management Dialog.
You Can Add Vehicles and Modify Vehicles Information, and delete the selected vehicles.

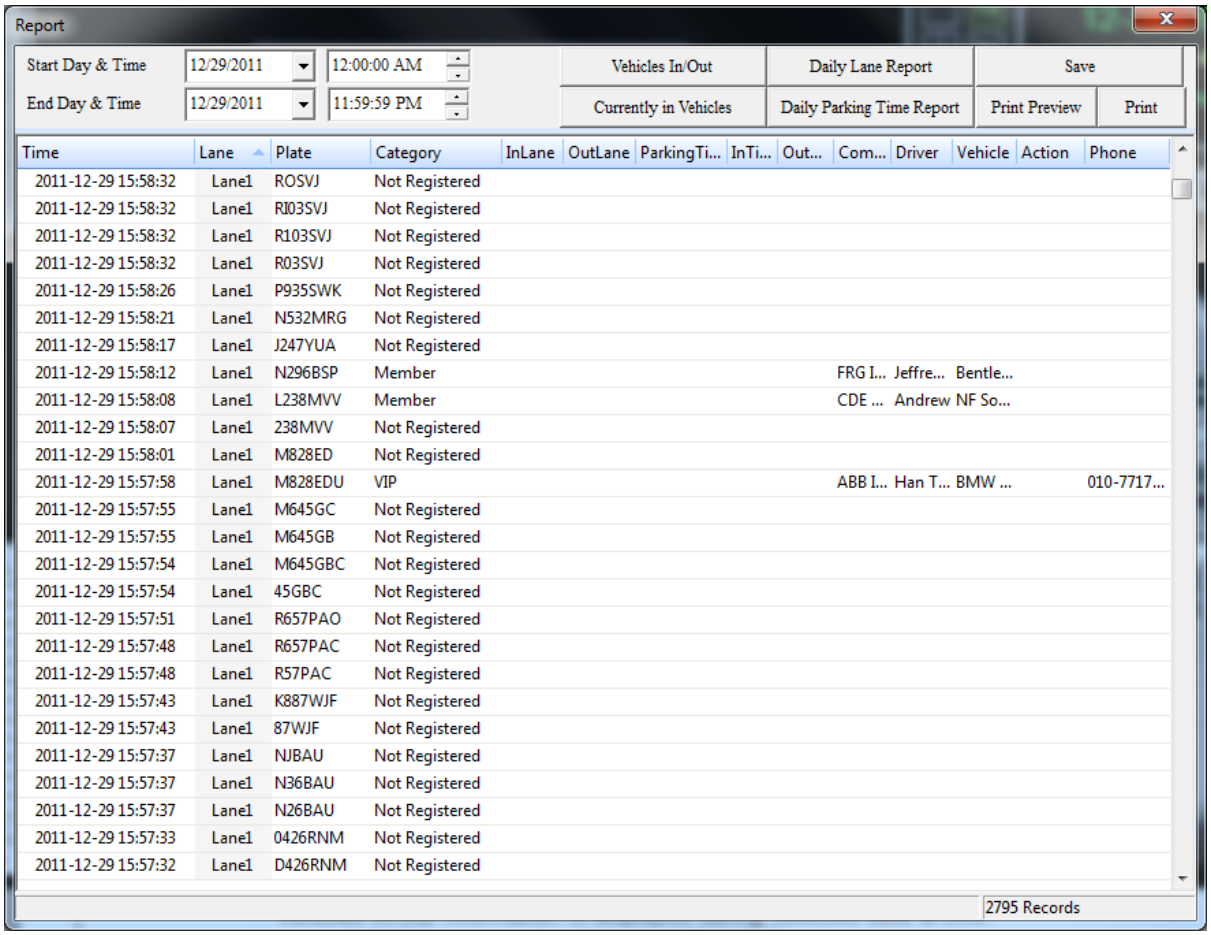


Search Option
You can find the specific vehicles depending on the options you choose.
You can enter partial or full part of Information in the Search Option Fields.

For Example) If you enter “P” in the Plate field, All vehicles could be found which include “P” character.

6.3 Report

Using Report button, you can see the statistics of the vehicles In/Out.


Report
Start Day & Time
12/29/2011
12:00:00 AM
End Day & Time
12/29/2011
11:59:59 PM
Vehicles In/Out
Daily Lane Report
Save
Currently in Vehicles
Daily Parking Time Report
Print Preview
Print
Time Lane Plate Category InLane OutLane ParkingTi... InTi... Out... Com... Driver Vehicle Action Phone
2011-12-29 15:58:32 Lane1 ROSVJ Not Registered
2011-12-29 15:58:32 Lane1 RI03SVJ Not Registered
2011-12-29 15:58:32 Lane1 R103SVJ Not Registered
2011-12-29 15:58:32 Lane1 R03SVJ Not Registered
2011-12-29 15:58:26 Lane1 P935SWK Not Registered
2011-12-29 15:58:21 Lane1 N532MRG Not Registered
2011-12-29 15:58:17 Lane1 J247YUA Not Registered
2011-12-29 15:58:12 Lane1 N296BSP Member FRG I... Jeffre... Bentle...
2011-12-29 15:58:08 Lane1 L238MVV Member CDE ... Andrew NF So...
2011-12-29 15:58:07 Lane1 238MVV Not Registered
2011-12-29 15:58:01 Lane1 M828ED Not Registered
2011-12-29 15:57:58 Lane1 M828EDU VIP ABB I... Han T... BMW ... 010-7717...
2011-12-29 15:57:55 Lane1 M645GC Not Registered
2011-12-29 15:57:55 Lane1 M645GB Not Registered
2011-12-29 15:57:54 Lane1 M645GBC Not Registered
2011-12-29 15:57:54 Lane1 45GBC Not Registered
2011-12-29 15:57:51 Lane1 R657PAO Not Registered
2011-12-29 15:57:48 Lane1 R657PAC Not Registered
2011-12-29 15:57:48 Lane1 R57PAC Not Registered
2011-12-29 15:57:43 Lane1 K887WJF Not Registered
2011-12-29 15:57:43 Lane1 87WJF Not Registered
2011-12-29 15:57:37 Lane1 NJBAU Not Registered
2011-12-29 15:57:37 Lane1 N36BAU Not Registered
2011-12-29 15:57:37 Lane1 N26BAU Not Registered
2011-12-29 15:57:33 Lane1 0426RNM Not Registered
2011-12-29 15:57:32 Lane1 D426RNM Not Registered
2795 Records

- Vehicles In/Out
  Vehicles In/Out Information is displayed during selected data & time.

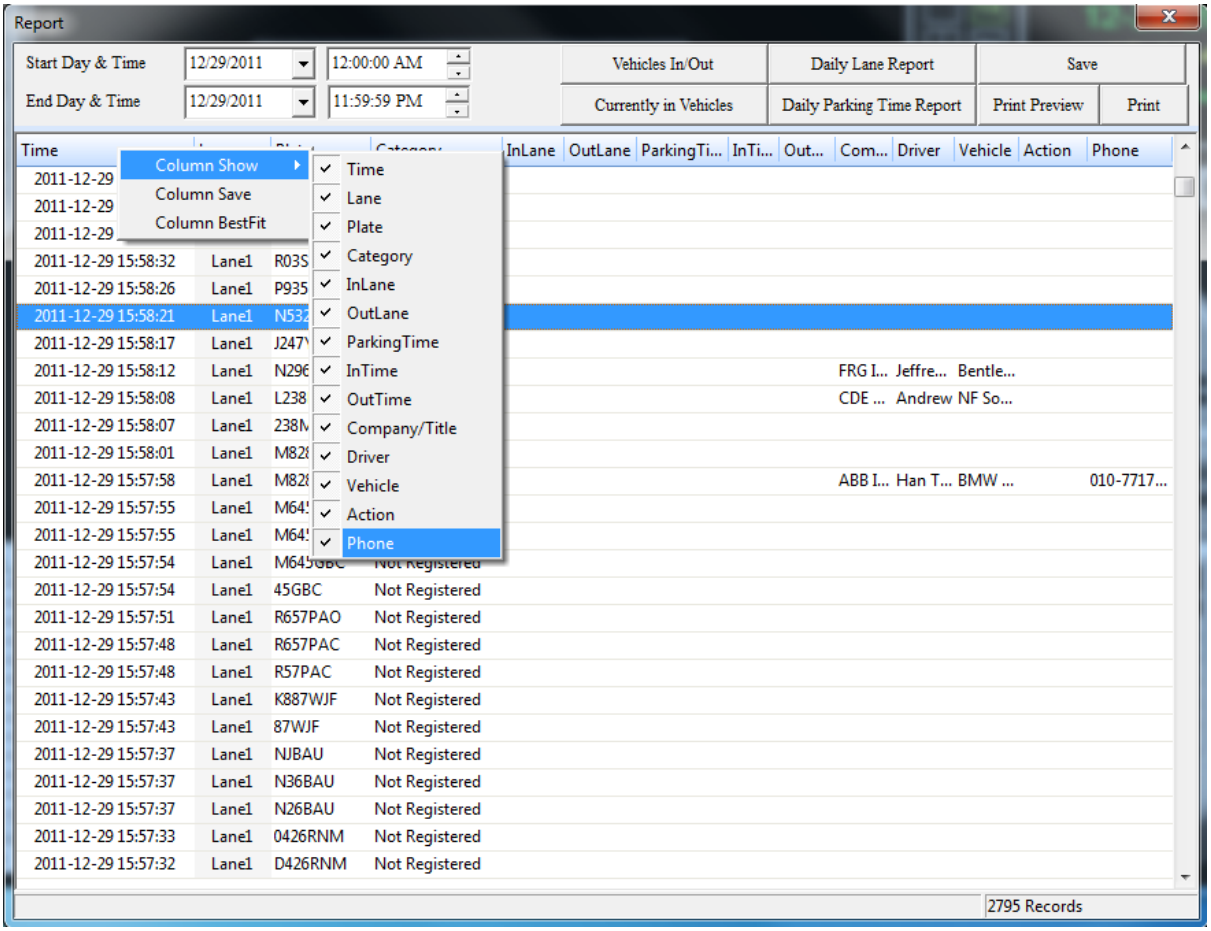
- Currently In Vehicles
  Vehicles currently in parking lot displayed.

- Daily Lane Report
  Daily vehicle's count displayed by Lane, by Lane Type

- Daily Parking Time Report
  Daily vehicle's parking time displayed.
  Total Vehicle, Total Parking Time, Min Parking time, Max Parking Time, Average Parking Time.

- Save
  You can save the report information as CSV file.

- Print Preview / Print
  You can print the report information.



On the Report Dialog, You can modify column information by mouse right click on the Header area. You can see the Column which you want by Column Show Menu.
And If you click Column Save, Column Show Information and column Width is saved, and then next time you click this report same column displayed.

You can modify Column's width by Column to Best Fit your needs menu.

Chapter 6

I/O Card & RS-485 VSR-1604P (optional)

Chapter 6. VSR-1604P Sensor I/O Card

6.1 Introduction to VSR-1604P Sensor I/O Card

This product is a DI/DO extension card designed for PC-based DVRs.

The VSR-1604P Sensor I/O Card supports 16 DI channels and 4 DO channels.

6.2 Functions of Major Connectors

6.2.1 Major Connectors

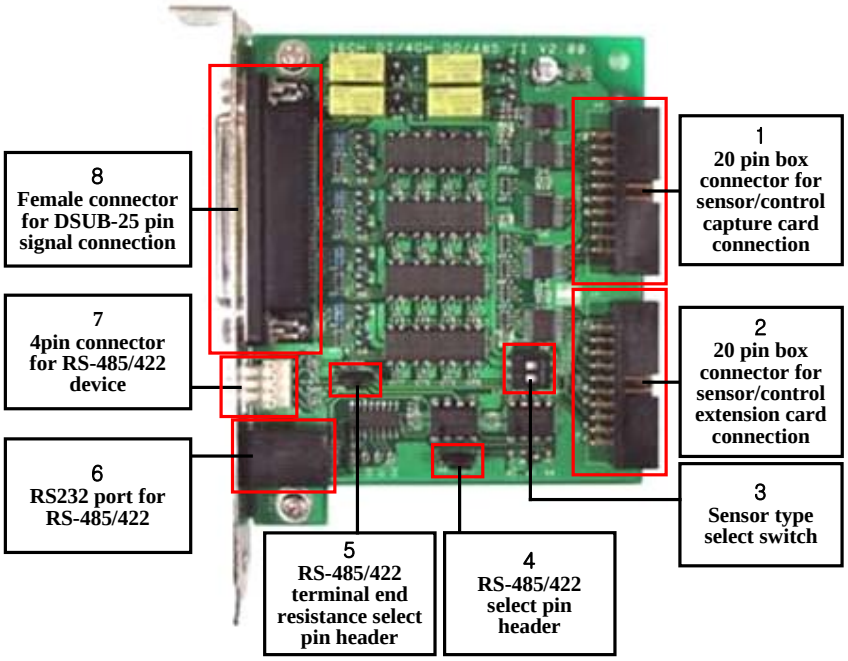


Figure 13. Major Connectors of VSR-1604P Sensor I/O Card

6.2.2 Details of major connectors

1 20 pin box connector (J4) for connecting the sensor/control capture card

This connector is used to connect the VSR-1604P Sensor I/O Card and the capture card.

2 20 pin box connector (J5) for connecting the sensor/control extension card

This connector is identical to the J4 and is connected to the extension card.

3 Sensor Type Select Switch (S1)

The relay type or voltage type for the sensor interface type can be set by turning the switch on and off. The switch is a 2-pin deep switch and so both pins must be on or off simultaneously.

4 RS485/422 select pin header (JP2)

This is a jumper pin header used to select RS485 or 422.

5 RS485/422 terminating resistance select pin header (JP1)

This is a pin header used to select the 120Ω terminating resistance connection.
For details regarding terminating resistance, see Section 5.7.1 Terminating resistance.

6 RS232 port for RS485/422 (J2)

This port is used to connect the COM port of the system with the RS 232.

7 4-pin connector for connecting RS485/422 devices (J1)

This connector is used to connect the RS485/422 cable of an external device.

8 Female connector for connecting DSUB-25pin signals (J3)

This is a DSUB-25 female connector used to receive incoming DI signals and to send DO signals externally. Points 1 through 20 of the connector are used to receive DI signals. Of those, pins 5, 10, 15 and 20 are common pins. When connecting a specific channel terminal with the common terminal by way of a sensor or switch, whether the sensor or switch turns on or off can be checked on the software monitor. Pins 21 to 25 of the connector are used to send DO signals with pin 25 as the common pin. DO signals can be controlled by software. If a DO turns on, the relay switch of the capture card will shorten the terminal and common terminal of that On channel.

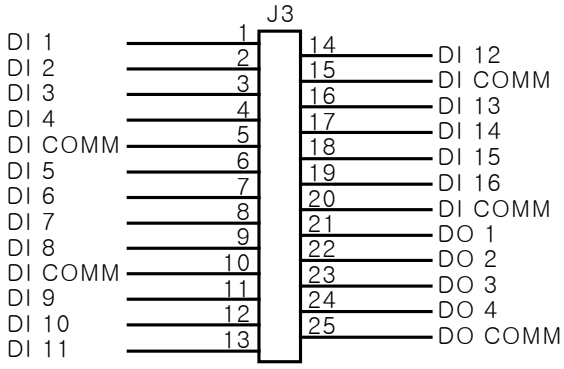


Figure 14. Female Connector for Connecting DSUB-25 Pin Signals

At DSUB-37 connector, ‘DI-COMM’ reads ‘S-COMM’. ‘DO_COMM reads ‘C-COMM’.

6.3 Sensors (Digital Input)

6.3.1 DI Specification

► Channel: 16 channels

► Interface Type: Relay type, voltage type

► Input operating range (if turned ON)
Voltage Type: Min: 3V, Typ: 5V, Max: 12V DC
Relay Type: Min: 0Ω, Max: 170Ω conductor resistance

► As the interface type (Voltage / Relay) and operating type (Normal Open / Normal Close) of the external sensor affects the settings, it must be set to 0(L) or 1(H) depending on what type of software or application is actually installed.

ex) The value recognized by software when a relay type and normal open sensor is used
Sensor Off => 0(L), Sensor On => 1(H)
The value recognized by software when a relay type and normal close sensor is used
Sensor Off => 1(H), Sensor On => 0(L)

DI Type	External Sensor Type	Sensor Status	The value recognized by the software
Voltage Type	Normal Open	OFF	1(H)
		ON	0(L)
	Normal Close	OFF	0(L)
		ON	1(H)
Relay Type	Normal Open	OFF	0(L)
		ON	1(H)
	Normal Close	OFF	1(H)
		ON	0(L)

Table 3. Sensor (digital input) Status Table

6.3.2 DI Interface Type

► **DI Circuit**

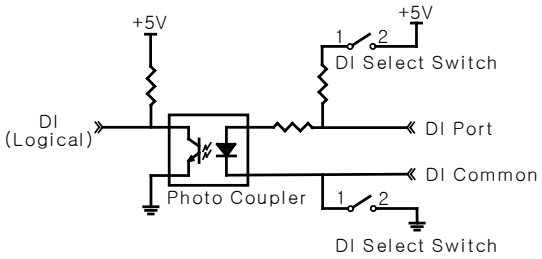
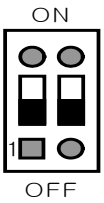


Figure 15. DI Circuit

► **DI Select Switch (S1)**



□ S WITCH	□ TYPE
ON	Relay
OFF	Voltage

Figure 16. DI Select Switch and its Status Table

► **Relay Type**

♦ If the switch is on, the DI port and DI common are short-circuited or at 0V.

♦ Type: Relay output sensor, magnetic switch, NPN open collector output sensor

► **Voltage Type**

♦ If the switch is on, the electric current is drawn to the DI port and runs the photo coupler.

♦ Type: PNP open collector output sensor

6.3.3 DI Operating Type

► **About Normal Open / Normal Close**

♦ **Relay Type**

Normal Open	This type is normally open (high impedance), but is short-circuited or at OV when operated.
Normal Close	This type is normally short-circuited or at OV, but is opened when operated

♦ **Voltage Type**

Normal Open	This type is normally open (high impedance), but generates certain voltage when operated.
Normal Close	This type normally generates certain voltage, but is opened when operated.

6.4 Controls (Digital Output)

6.4.1 DO Specification

- ► Channel: 4 channels
- ► Output Type: Relay interface
- ► Relay Rating: Max: 250Vdc, 0.15A, 30W

6.4.2 DO Operation

- ► Its relay type is normal open.
- ► Before software runs, the relay is set to Off.
- ► Turn on or off the corresponding relay using the software. If the relay is on, the DO port and DO common are short-circuited.

6.5 RS-485/422

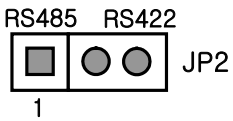
6.5.1 RS-485/422 Specification

- ► Standard RS-485, RS-422
- ► Input Operating Range Min: -7V, Max +12VDC
- ► Able to connect 16 devices

6.5.2 RS-485/422 Operation

- ► **RS-485/422 Select Pin Header (JP2)**

♦ **RS-485/422 Selection**



JUMPER	TYPE
1-2	RS-485
2-3	RS-422

Figure 17. RS-485/422 Select Pin Header and its Status Table

♦ **When RS-485 is selected**

J1 Pin Number	Function (RTS enabled)	Function (RTS disabled)
1	TX+(Noninverting Driver Output)	RX+(Noninverting Receiver Input)
2	TX-(Inverting Driver Output)	RX-(Inverting Receiver Input)
3	TX+(Noninverting Driver Output)	
4	TX-(Inverting Driver Output)	

Table 4. Status Table when RS-485 is selected

♦ **When RS-422 is selected**

J1 Pin Number	Function
1	RX+(Noninverting Receiver Input)
2	RX-(Inverting Receiver Input)
3	TX+(Noninverting Driver Output)
4	TX-(Inverting Driver Output)

Table 5. Status Table when RS-422 is selected

► **RS485/422 Terminating resistance Select Pin Header (JP1)**

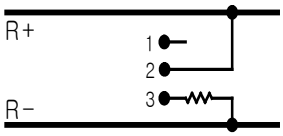
♦ **What is the Terminating resistance?**

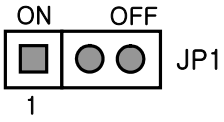
The terminating resistance is used for the impedance matching of wires in order to prevent any distortion or attenuation caused by transfer delay when data is transferred through a RS-422 or RS-485 device over a long distance. The terminating resistance is not normally used for a short-distance transfer (less than 1.2km), but rather for a long-distance data transfer, especially when the communication line is unstable.

The VSR-1604P Sensor I/O Card is designed to easily connect and cancel the terminating resistance by way of a jumper.

♦ **Selecting Terminating resistance**

The terminating resistance creates 120Ω resistance between 1 and 2 pins of the JP1. When RS-422 is selected, the resistance will be created between RX+ and RX-, while when RS-485 is selected, it will be created between TRX+ and TRX-.





JUMPER	TYPE
1-2(ON)	120Ω MATCHING
2-3(OFF)	NO 120Ω MATCHING

Figure 18. RS-485/422 Terminating Resistance Select Pin Header and its Status Table

6.6 Connecting VSR-1604P Sensor, RS-485 I/O Card and External Devices

6.6.1 Connecting a Capture Card

Connect the 20-pin box connector (J4) to the capture card. Use the J5 connector to add an extension card.

6.6.2 Connecting DI/DO External Devices

The DIs are used to connect external sensors or switches while the DOs are used to connect external sirens or alarm lamps. To connect DIs or DOs, use the DSUB-25 pin female connector (J3).

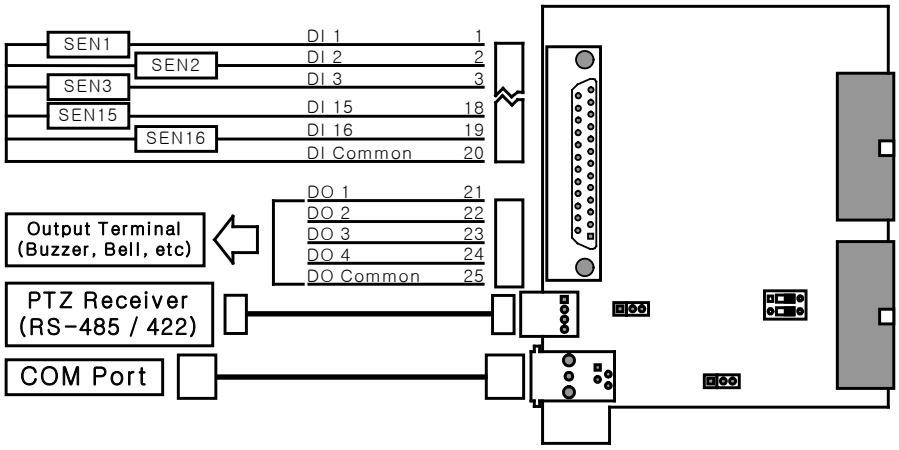


Figure 19. Connecting DI/DO External Devices

Figure 20. Cable for Connecting DSUB-25 Pin Signals

At DSUB-37 connector, ‘DI-COMM’ reads ‘S-COMM’. ‘DO_COMM reads ‘C-COMM’.

6.6.3 Connecting RS-485/422 Devices

The RS485/422 communication functions are used to control pan/tilt/zoom cameras. Connect a RS-485/422 device to the JI by way of a 4 pin connector.

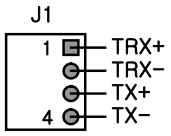


Figure 21. RS-485/422 Device Pin Layout

6.6.4 Connecting Signal Cables of RS-485/422 Devices

These cables are used to connect the devices to the COM port of another system. Use only the RJ connectors provided by the company. The following figure illustrates the pin layout.

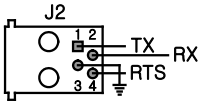


Figure 22. RS-485/422 Device Signal Cable Pin Layout

Chapter 7

I/O Card & RS-485 VSR-404 (optional)

VSR-404 Sensor I/O Card

7.1 Introduction to VSR-404 Sensor I/O Card

This product is a DI/DO extension card designed for PC-based DVRs.

The VSR-404 Sensor I/O Card supports 4 DI channels and 4 DO channels.

7.2 Functions of Major Connectors

7.2.1 Major Connectors

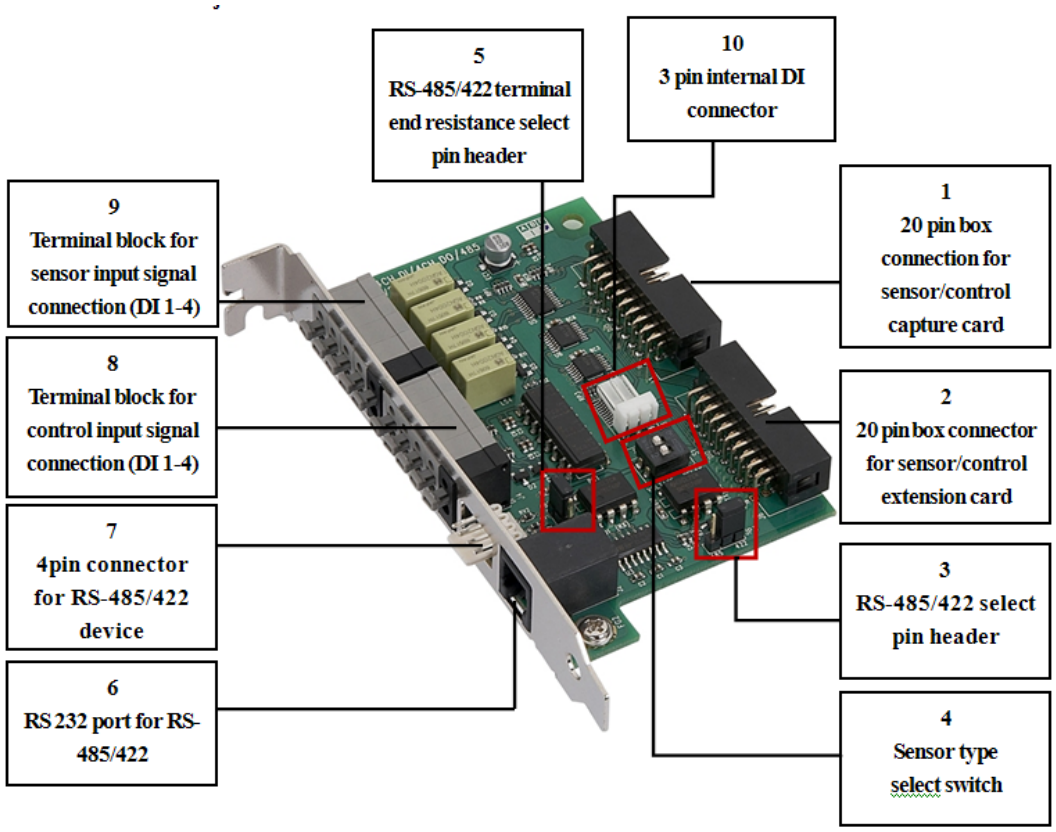


Figure 23. Major Connectors of VSR-404 Sensor I/O Card

7.2.2 Details of major connectors

1 20 pin box connector (J3) for connecting the sensor/control capture card

This connector is used to connect the VSR-404 Sensor I/O Card and the capture card.

2 20 pin box connector (J6) for connecting the sensor/control extension card

This connector is identical to the J3 and is connected to the extension card.

3 RS485/422 Select pin header (JP3)

This is a jumper pin header used to select RS485 or 422.

4 Sensor type select switch (S1)

The relay type or voltage type for the sensor interface type can be set by turning the switch on and off. The switch is a 2-pin deep switch and so both pins must be conjunctively on or off.

5 RS485/422 terminating resistance select pin header (JP1)

This is a pin header used to select 120Ù end resistance connection.
For details regarding terminating resistance, see Section 5.7.1 Terminating resistance.

6 RS232 port for RS485/422 (J2)

This port is used to connect the COM port of the system with the RS 232.

7 4-pin connector for connecting RS485/422 Devices (J1)

This connector is used to connect the RS485/422 cable of an external device.

8 DI 1-4 terminal block for sensor input signal connection (J4)

This connector is used to receive externally incoming DI signals. The channel numbers are 1, 2, 3, and 4 from top to bottom. They act as terminals for receiving DI signals and the lowest terminal is used as a common port. If connecting a specific channel and the common terminal by way of a sensor or switch, whether the sensor or switch turns on or off can be checked on the software monitor.

9 DI 1-4 terminal block for control input signal connection (J5)

This connector is used to send out DO signals. The channel numbers are 1, 2, 3, and 4 from top to bottom. They act as terminals for sending out DO signals and the lowest terminal is used as a common port.

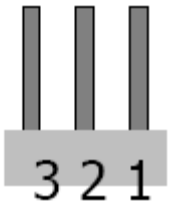
DO signals can be controlled by software. If a DO turns on, the relay switch of the capture card will shorten the terminal and common terminal of that On channel.

10 3 pin internal DI connector

This connector is used to connect to the internal DI port in the system. This connector is shared with DI 4. For this reason, DI 4 and this connector cannot be used at the same time. About the detail, refer to 5.2.3

7.2.3 Internal Digital Input

► Description of Internal Digital Input The „internal DI port“ means a digital input port that is located inside the PC bracket when you install an EIO card in your PC. The „external DI port“ means a normal digital input port that is attached to the PC bracket when you install an EIO card in your PC. The internal DI port shares with one of the external DI ports. In other words, if the internal DI port is used, you cannot use one of the external DI ports. The internal DI port is connected to the last external port of them by hardware. When you use internal DI port, it is not mandatory to remove the external DI port. Just do not use the last external DI port (DI4) Internal DI port MUST use a relay type device. This internal DI port is shared with an external DI port. Therefore, pins to be used will be different depending on the sensor type of external DI port.



TYPE	Connect to
Voltage	1.2
Relay	2.3

Figure 13. The internal DI port connection according to the sensor type of external DI port

► Voltage Type If you want to use voltage type sensor to the external DI port, please set DI select switch (SW2) as OFF and then connect the internal DI cable to pin 1 and 2 of 3-pin connector as the following picture.

► Relay Type If you want to use relay type sensor to the external DI port, please set DI select switch (SW2) as ON and then connect internal DI cable to pin 2 and 3 of 3-pin connector.

7.3 Sensors (Digital Input)

7.3.1 DI Specification

► Channel: 4 channels

► Interface Type: Relay Type, Voltage Type

► Input operating range (if turned ON)
Voltage Type: Min: 3V, Typ: 5V, Max: 12V DC
Relay Type: Min: 0Ω, Max: 170Ω conductor resistance

► As the interface type (Voltage / Relay) and operating type (Normal Open / Normal Close) of the external sensor affects the settings, it must be set to 0(L) or 1(H) depending on what type of software or application is actually installed.

ex) The value recognized by the software when a relay type and normal open sensor is used
Sensor Off => 0(L), Sensor On => 1(H)
The value recognized by the software when a relay type and normal close sensor is used
Sensor Off => 1(H), Sensor On => 0(L)

DI Type	External Sensor Type	Sensor Status	The value recognized by the software
Voltage Type	Normal Open	OFF	1(H)
		ON	0(L)
	Normal Close	OFF	0(L)
		ON	1(H)
Relay Type	Normal Open	OFF	0(L)
		ON	1(H)
	Normal Close	OFF	1(H)
		ON	0(L)

Table 6. Sensor (digital input) Status Table

7.3.2 DI Interface Type

► **DI Circuit**

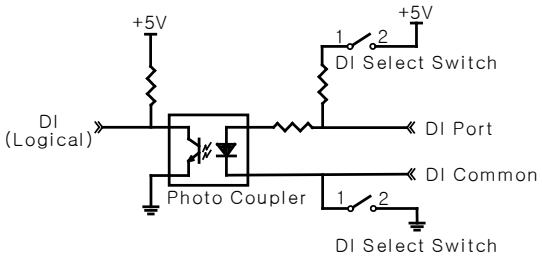
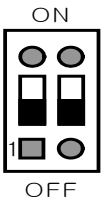


Figure 24. DI Circuit

► **DI Select Switch (S1)**



□ S WITCH	□ TYPE
ON	Relay
OFF	Voltage

Figure 25. DI Select Switch and its Status Table

► **Relay Type**

♦ If the switch is on, the DI port and DI common are short-circuited or at 0V.

♦ Type: Relay output sensor, magnetic switch, NPN open collector output sensor

► **Voltage Type**

♦ If the switch is on, the electric current is drawn to the DI port and runs the photo coupler.

♦ Type: PNP open collector output sensor

7.3.3 DI Operating Type

► **About Normal Open / Normal Close**

♦ **Relay Type**

Normal Open	This type is normally open (high impedance), but is short-circuited or at OV when operated.
Normal Close	This type is normally short-circuited or at OV, but is opened when operated.

♦ **Voltage Type**

Normal Open	This type is normally open (high impedance), but generates certain voltage when operated.
Normal Close	This type normally generates voltage, but is opened when operated.

7.4 Controls (Digital Output)

7.4.1 DO Specification

- ► Channel: 4 channels
- ► Output Type: Relay interface
- ► Relay Rating: Max: 24VAC 500mA/12VDC 1A

7.4.2 DO Operation

- ► Its relay type is normal open.
- ► Before software runs, the relay is set to Off.
- ► Turn on or off the corresponding relay using the software. If the relay is on, the DO port and DO common are short-circuited.

7.5 RS-485/422

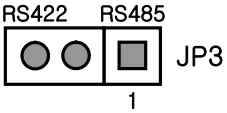
7.5.1 RS-485/422 Specifications

- ► Standard RS-485, RS-422
- ► Input Operating Range Min: -7V, Max +12VDC
- ► Able to connect 128 devices

7.5.2 RS-485/422 Operation

►RS485/422 Selection Pin Header (JP3)

♦ RS485/422 Selection



JUMPER	TYPE
1-2	RS-485
2-3	RS-422

Figure 26. RS-485/422 Select Pin Header and its Status Table

♦ When RS-485 is selected

J1 Pin Number	Function (RTS enabled)	Function (RTS disabled)
1	TX+(Noninverting Driver Output)	RX+(Noninverting Receiver Input)
2	TX-(Inverting Driver Output)	RX-(Inverting Receiver Input)
3	TX+(Noninverting Driver Output)	
4	TX-(Inverting Driver Output)	

Table 7. Status Table when RS-485 is selected

♦ When RS-422 is selected

J1 Pin Number	Function
1	RX+(Noninverting Receiver Input)
2	RX-(Inverting Receiver Input)
3	TX+(Noninverting Driver Output)
4	TX-(Inverting Driver Output)

Table 8. Status Table when RS-422 is selected

► RS485/422 Terminating resistance Select Pin Header (JP1)

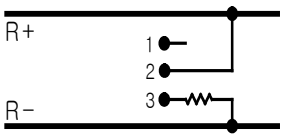
♦ What is the Terminating resistance?

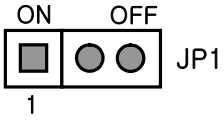
The terminating resistance is used for the impedance matching of wires in order to prevent any distortion or attenuation caused by transfer delay when data is transferred through the RS-422 or RS-485 over a long distance. The terminating resistance is not normally used for a short-distance transfer (less than 1.2km), but rather for a long-distance data transfer, especially when the communication line is unstable.

The VRS-404 Sensor I/O Card is designed to easily connect and cancel the terminating resistance by way of a jumper.

♦ **Selecting Terminating resistance**

The terminating resistance creates 120Ω resistance between pins 1 and 2 of the JP1. When RS-422 is selected, resistance will be created between RX+ and RX-, while when RS-485 is selected, it will be created between TRX+ and TRX-.





JUMPER	TYPE
1-2(ON)	120Ω MATCHING
2-3(OFF)	NO 120Ω MATCHING

Figure 27. RS-485/422 Terminating Resistance Select Pin Header and its Status Table

7.6 Connecting VRS-404 Sensor I/O Card and External Devices

7.6.1 Connecting a Capture Card

Connect the 20-pin box connector (J3) to the capture card. Use the J6 connector to add an extension card.

7.6.2 Connecting DI/DO External Devices

The DIs are used to connect external sensors or switches and are attached to the J4 connector.
The DOs are used to connect external sensors or switches and are attached to the J5 connector.

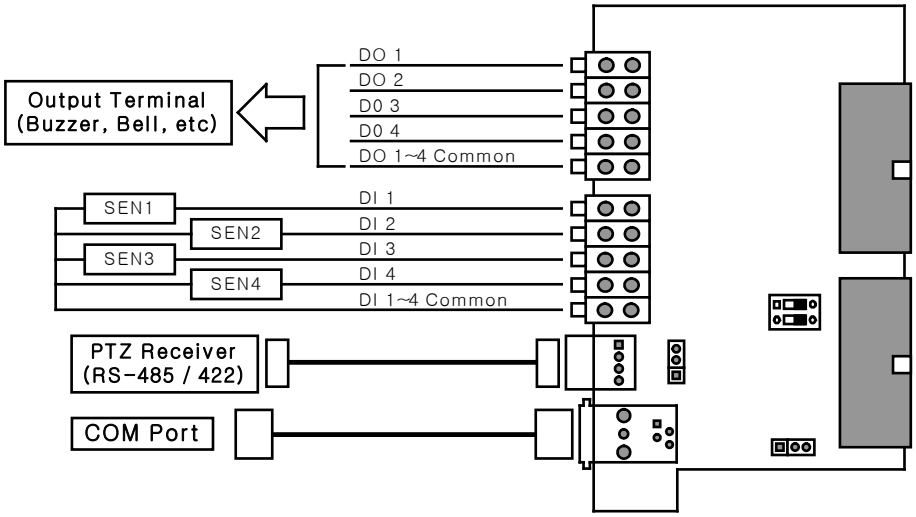


Figure 28. Connecting DI/DO External Devices

7.6.3 Connecting RS-485/422 Devices

The RS485/422 communication functions are used to control pan/tilt/zoom cameras. Connect a RS-485/422 device to the JI by way of a 4 pin connector.

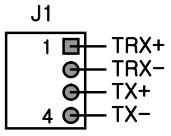


Figure 29. RS-485/422 Device Pin Layout

7.6.4 Connecting Signal Cables of RS-485/422 Devices

These cables are used to connect the devices to a COM port of another system. Use only the RJ connectors provided by the company. The following figure illustrates the pin layout.

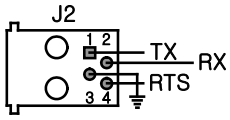


Figure 30. RS-485/422 Device Signal Cable Pin Layout

7.7 Reference

7.7.1 Terminating resistance

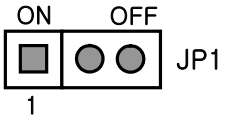
♦ What is the Terminating resistance?

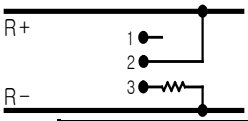
The terminating resistance is used for the impedance matching of wires in order to prevent any distortion or attenuation caused by transfer delay when data is transferred through the RS-422 or RS-485 over a long distance. The terminating resistance is not normally used for a short-distance transfer (less than 1.2km), but rather for a long-distance data transfer, especially when the communication line is unstable.

The VRS-404 Sensor I/O Card is designed to easily connect and cancel the terminating resistance by way of a jumper.

♦ Selecting Terminating resistance

The terminating resistance creates 120Ω resistance between pins 1 and 2 of the JP1. When RS-422 is selected, the resistance will be created between RX+ and RX-, while when RS-485 is selected, it will be created between TRX+ and TRX-.





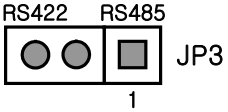
JUMPER	TYPE
1-2(ON)	120Ω MATCHING
2-3(OFF)	NO 120Ω MATCHING

Figure 31. Terminating Resistance Select Pin Header and its Status Table

7.7.2 RS-485/422 Connector Functions

The VRS-404 sensor I/O Card supports RS485 or RS422 communication using its JI connector. RS485 or RS422 communication can be selected by using the select pin header.

►RS485/422 Select Pin Header (JP3)



JUMPER	TYPE
1-2	RS485
2-3	RS422

Figure 32. RS-485/422 Select Pin Header and its Status Table

♦ RS485/422 Selection

► To select RS485

Connect pin 1 and pin 2 of the JP3 to the jumper (see the above figure).

► To select RS422

Connect pin 2 and pin 3 of the JP3 to the jumper (see the above figure).